

CENTER FOR DRUG EVALUATION AND RESEARCH

Approval Package for: 074538

Trade Name : TRIVORA-21 AND TRIVORA-28 TABLETS

**Generic Name: Levonorgestrel and Ethinyl Estradiol Tablets USP,
Triphasic Regimen**

Sponsor : GD Searle and Co.

Approval Date: December 18, 1997

CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION 074538

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	Included	Pending Completion	Not Prepared	Not Required
Approval Letter	X			
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Chemistry Review(s)	X			
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Pharmacology Review(s)				
Statistical Review(s)				
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Clinical Pharmacology				
Biopharmaceutics Review(s)				
Bioequivalence Review(s)	X			
Administrative Document(s)				
Correspondence				

CENTER FOR DRUG EVALUATION AND RESEARCH

Application Number 074538

APPROVAL LETTERS

DEC 18 1997

G. D. Searle & Co.
Attention: Doranne Frano
4901 Searle Parkway
Skokie, IL 60077

Dear Madam:

This is in reference to your abbreviated new drug application dated August 19, 1994, submitted pursuant to Section 505(j) of the Federal Food, Drug, and Cosmetic Act, for Trivora-21 and Trivora-28 (Levonorgestrel and Ethinyl Estradiol Tablets, USP), Triphasic Regimen.

Reference is also made to your amendments dated November 30, 1995; July 19, 1996; and January 27, February 20, February 25, and October 24, 1997.

We have completed the review of this abbreviated application and have concluded that the drug is safe and effective for use as recommended in the submitted labeling. Accordingly, the application is approved. The Division of Bioequivalence has determined that your Trivora®-21 and Trivora®-28 (Levonorgestrel and Ethinyl Estradiol Tablets, USP) Tablets are bioequivalent and, therefore, therapeutically equivalent to those of the listed drug (Triphasil®-21 and Triphasil®-28 of Wyeth Ayerst Laboratories, Inc.). Your dissolution testing should be incorporated into the stability and quality control program using the same method proposed in your application.

Under 21 CFR 314.70, certain changes in the conditions described in this abbreviated application require an approved supplemental application before the change may be made.

Post-marketing reporting requirements for this abbreviated application are set forth in 21 CFR 314.80-81. The Office of Generic Drugs should be advised of any change in the marketing status of this drug.

We request that you submit, in duplicate, any proposed advertising or promotional copy which you intend to use in your initial advertising or promotional campaigns. Please submit all proposed materials in draft or mock-up form, not final print. Submit both copies together with a copy of the proposed or final printed labeling to the Division of Drug Marketing, Advertising,

and Communications (HFD-240). Please do not use Form FD-2253 (Transmittal of Advertisements and Promotional Labeling for Drugs for Human Use) for this initial submission.

We call your attention to 21 CAR 314.81(b)(3) which requires that materials for any subsequent advertising or promotional campaign be submitted to our Division of Drug Marketing, Advertising, and Communications (HFD-240) with a completed Form FD-2253 at the time of their initial use.

Sincerely yours,

12/18/97

Douglas L. Sporn
Director
Office of Generic Drugs
Center for Drug Evaluation and Research

CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER 074538

FINAL PRINTED LABELING

Trivora-21

126 Tablets
NDC 0905-0289-21

Important

Note to Dispensing Pharmacist:
The "Patient Package Insert" including directions for use and the "Detailed Patient Labeling" are both enclosed inside each tablet dispenser. These are for the patient and are part of the official labeling for the product.
FEDERAL REGULATIONS REQUIRE that they be GIVEN TO THE PATIENT when dispensing.

A08765

(levonorgestrel and ethinyl estradiol tablets, USP) - Triphasic Regimen
Each blue tablet (6) contains levonorgestrel 0.05 mg and ethinyl estradiol 0.03 mg, each white tablet (5) contains levonorgestrel 0.075 mg and ethinyl estradiol 0.04 mg and each pink tablet (10) contains levonorgestrel 0.125 mg and ethinyl estradiol 0.03 mg.

Tablet Dispenser

6 units of 21 tablets

Caution: Federal law prohibits dispensing without prescription.

Usual Dosage: One tablet daily as recommended in enclosed detailed product information.

Store at controlled room temperature 15°-30°C (59°-86°F).

Manufactured for
SCS Pharmaceuticals, Chicago IL 60680 USA
By Syntex (F.P.) Inc., Humacao PR 00791

Trivora-21

(levonorgestrel and ethinyl estradiol tablets, USP) - Triphasic Regimen

Tablet Dispenser

6 units of 21 tablets

DEC 18 1997

SCS Pharmaceuticals



A08765

126 Tablets
NDC 0905-0289-21

Trivora®-21

(levonorgestrel and ethinyl
estradiol tablets, USP) -
Triphasic Regimen

Each blue tablet (6) contains levonorgestrel 0.05 mg
and ethinyl estradiol 0.03 mg, each white tablet (5)
contains levonorgestrel 0.075 mg and ethinyl
estradiol 0.04 mg and each pink tablet (10) contains
levonorgestrel 0.125 mg and ethinyl estradiol 0.03 mg.

Tablet Dispenser

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dispensing without prescription.

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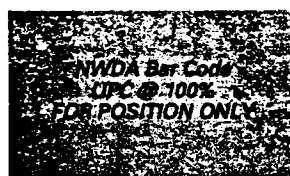
Manufactured for
SCS Pharmaceuticals, Chicago IL 60680 USA
By Syntex (F.P.) Inc., Humaero PR 00791

Trivora®-21

(levonorgestrel and ethinyl
estradiol tablets, USP) -
Triphasic Regimen

Tablet Dispenser

6 units of 21 tablets



3 0905-0289-21 *

SCS Pharmaceuticals

PS

28 Tablets • NDC 0905-0291

Trivora®-28

Each blue tablet (6) contains levonorgestrel 0.05 mg and ethinyl estradiol 0.03 mg, each white tablet (5) contains levonorgestrel 0.075 mg and ethinyl estradiol 0.04 mg, each pink tablet (10) contains levonorgestrel 0.125 mg and ethinyl estradiol 0.03 mg and each peach tablet (7) contains inert ingredients.

This product (like all oral contraceptives) is intended to prevent pregnancy. It does not protect against HIV infection (AIDS) and other sexually transmitted diseases.

Store at controlled room temperature
15°-30°C (59°-86°F).

SCS Pharmaceuticals

Pharmacist:
Place Rx
Label Here

Caution: Federal law prohibits dispensing
without prescription.

BE SURE TO READ THE PATIENT LABELING

Manufactured for
SCS Pharmaceuticals, Chicago IL 60680 USA
By Syntex (F.P.) Inc., Humacao PR 00791

A08791

1/2 - inch bar code

PS

21 Tablets • NDC 0905-0289

Trivora®-21

Each blue tablet (6) contains levonorgestrel 0.05 mg and ethinyl estradiol 0.03 mg, each white tablet (5) contains levonorgestrel 0.075 mg and ethinyl estradiol 0.04 mg and each pink tablet (10) contains levonorgestrel 0.125 mg and ethinyl estradiol 0.03 mg.

This product (like all oral contraceptives) is intended to prevent pregnancy. It does not protect against HIV infection (AIDS) and other sexually transmitted diseases.

Store at controlled room temperature
15°-30°C (59°-86° F).

SCS Pharmaceuticals

Pharmacist:
Place Rx
Label Here

DEC 18 1997

Caution: Federal law prohibits dispensing without prescription.

BE SURE TO READ THE PATIENT LABELING

Manufactured for
SCS Pharmaceuticals, Chicago IL 60680 USA
By Syntex (F.P.) Inc., Humacao PR 00791

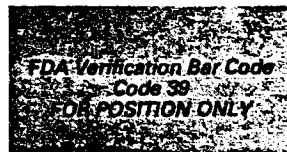
A08790

1-inch Bar Code

A08766

Note to Dispensing Pharmacist:
The "Patient Package Insert" including
directions for use and the "Detailed
Patient Labeling" are both enclosed
inside each tablet dispenser. These
are for the patient and are part of
the official labeling for the product.
FEDERAL REGULATIONS
REQUIRE that they be GIVEN
TO THE PATIENT when dispensing.

Important



A08766

168 Tablets
NDC 0905-0291-28

Trivora®-28

(levonorgestrel and ethinyl
estradiol tablets, USP) -
Triphasic Regimen

Each blue tablet (6) contains levonorgestrel 0.05 mg
and ethinyl estradiol 0.03 mg, each white tablet (5)
contains levonorgestrel 0.075 mg and ethinyl
estradiol 0.04 mg, each pink tablet (10) contains
levonorgestrel 0.125 mg and ethinyl estradiol 0.03 mg
and each peach tablet (7) contains inert ingredients.

Tablet Dispenser

6 units of 28 tablets

Caution: Federal law prohibits
dispensing without prescription.

Usual Dosage: One tablet daily as
recommended in enclosed detailed
product information.

Store at controlled room temperature
15°-30°C (59°-86°F).

Manufactured for
SCS Pharmaceuticals, Chicago IL 60680 USA
By Syntex (F.P.) Inc., Humacao PR 00791

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Trivora®-28

(levonorgestrel and ethinyl
estradiol tablets, USP) -
Triphasic Regimen

Tablet Dispenser

6 units of 28 tablets

DEC 18 1997

SCS Pharmaceuticals

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Tablets
0905-0291-28

Trivora®-28

**levonorgestrel and ethinyl
estradiol tablets, USP) -
Triphasic Regimen**

blue tablet (6) contains levonorgestrel 0.05 mg
ethinyl estradiol 0.03 mg, each white tablet (5)
contains levonorgestrel 0.075 mg and ethinyl
estradiol 0.04 mg, each pink tablet (10) contains
levonorgestrel 0.125 mg and ethinyl estradiol 0.03 mg
each peach tablet (7) contains inert ingredients.

Tablet Dispenser

6 units of 28 tablets

Warning: Federal law prohibits
use without prescription.

Dosage: One tablet daily as
indicated in enclosed detailed
package information.

Store at controlled room temperature
20°C (59°-86°F).

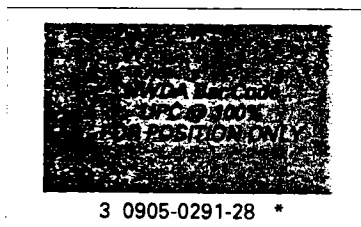
Manufactured for
SCS Pharmaceuticals, Chicago IL 60680 USA
Santex (F.P.) Inc., Humacao PR 00791

Trivora®-28

**(levonorgestrel and ethinyl
estradiol tablets, USP) -
Triphasic Regimen**

Tablet Dispenser

6 units of 28 tablets



SCS Pharmaceuticals

TRIVORA®-21 AND 28 TABLETS HOW TO USE THE BLISTER CARD
(levonorgestrel and ethinyl estradiol tablets, USP) - Triphasic Regimen

THE FIRST MONTH

STEP 1—Find the day label strip (see other side) that starts with the day of the week your period begins. (The first day of your period is the day you begin bleeding or spotting, even if it is almost midnight when bleeding begins.)

STEP 2—Peel that day label strip and place it on the top of the blister card across the area where each day of the week is noted. Make sure each day of the week is directly above a row of pills. For example, if your period begins on a Tuesday, pick the day label strip that starts with Tuesday and stick it on the blister card on top of the days of week words. Throw away the day label strips you are not using.

STEP 3—On the first day of your period, take the first blue pill from the top row just to the right of Week 1. Each day take one pill, from left to right, following the days of the week as shown on the day label at the top of the card. When you have taken all the pills in Week 1 go on to Week 2. Continue to take one pill each day (from left to right) as you did in the first week. Then go on to Week 3 and, if taking 28 day tablets, week 4 (peach tablets) continuing to take each pill in the proper order.

STEP 4—After taking the last pink pill, you will usually have a period a few days later. Then, if taking 21 day tablet, for Week 4, wait 7 days to start the next pack. Be sure that no more than 7 days pass between 21-day packs. If taking 28 day tablets, take a pill every day without interruption until the last peach pill has been taken.

AFTER THE FIRST MONTH

After Week 4, start a new blister card on the very next day no matter when your period started. If you have taken the pills as directed, the day label strip on each new blister card will start on the same day of the week as you started the first blister card. Each blister card comes with a full set of day labels. Choose the proper day label, and stick it on the blister card. Always throw away the labels you are not using. Take the pills in each new blister card as you did before.

TRIVORA®-21 AND 28 TABLETS HOW TO USE THE BLISTER CARD
 (levonorgestrel and ethinyl estradiol tablets, USP) - Triphasic Regimen

MON	TUE	WED	THU	FRI	SAT	SUN
TUE	WED	THU	FRI	SAT	SUN	MON
WED	THU	FRI	SAT	SUN	MON	TUE
THU	FRI	SAT	SUN	MON	TUE	WED
FRI	SAT	SUN	MON	TUE	WED	THU
SAT	SUN	MON	TUE	WED	THU	FRI
SUN	MON	TUE	WED	THU	FRI	SAT

FOR USE WITH DAY 1 START REGIMEN ONLY

A08844

077 13 15



WHEN TO START THE FIRST PACK OF PILLS

You have a choice of which day to start taking your first pack of pills. Decide with your doctor or clinic which is the best day for you. Pick a time of day which will be easy to remember.

DAY 1 START:

1. Take the first "active" blue pill of the first pack during the first 24 hours of your period.
2. You will not need to use a back-up method of birth control, since you are starting the pill at the beginning of your period.

SUNDAY START:

1. Take the first "active" blue pill of the first pack on the Sunday after your period starts, even if you are still bleeding. If your period begins on Sunday, start the pack that same day.
2. Use another method of birth control as a back-up method if you have sex anytime from the Sunday you start your first pack until the next Sunday (7 days). Condoms, foam, or the sponge are good back-up methods of birth control.

WHAT TO DO DURING THE MONTH

1. TAKE ONE PILL AT THE SAME TIME EVERY DAY UNTIL THE PACK IS EMPTY.

Do not skip pills even if you are spotting or bleeding between monthly periods or feel sick to your stomach (nausea).

Do not skip pills even if you do not have sex very often.

2. WHEN YOU FINISH A PACK OR SWITCH YOUR BRAND OF PILLS:

21 pills: Wait 7 days to start the next pack. You will probably have your period during that week. Be sure that no more than 7 days pass between 21-day packs.

28 pills: Start the next pack on the day after your last "reminder" pill. Do not wait any days between packs.

WHAT TO DO IF YOU MISS PILLS

If you **MISS 1** blue, white or pink "active" pill:

1. Take it as soon as you remember. Take the next pill at your regular time. This means you may take 2 pills in 1 day.
2. You do not need to use a back-up birth control method if you have sex.

If you **MISS 2** blue or white "active" pills in a row in **WEEK 1 OR WEEK 2** of your pack:

1. Take 2 pills on the day you remember and 2 pills the next day.
2. Then take 1 pill a day until you finish the pack.
3. You **MAY BECOME PREGNANT** if you have sex in the 7 days after you miss pills. You **MUST** use another birth control method (such as condoms, foam, or sponge) as a back-up for those 7 days.

If you **MISS 2** pink "active" pills in a row in **THE 3rd WEEK**:

1. **If you are a Day 1 Starter:**
THROW OUT the rest of the pill pack and start a new pack that same day.

If you are a Sunday Starter:

Keep taking 1 pill every day until Sunday.

On Sunday, THROW OUT the rest of the pack and start a new pack of pills that same day.

2. You may not have your period this month but this is expected. However, if you miss your period 2 months in a row, call your doctor or clinic because you might be pregnant.
3. You **MAY BECOME PREGNANT** if you have sex in the 7 days after you miss pills. You **MUST** use another birth control method (such as condoms, foam, or sponge) as a back-up for those 7 days.

If you **MISS 3 OR MORE** blue, white or pink "active" pills in a row (during the first 3 weeks):

1. **If you are a Day 1 Starter:**
THROW OUT the rest of the pill pack and start a new pack of pills that same day.

If you are a Sunday Starter:

Keep taking 1 pill every day until Sunday.

On Sunday, THROW OUT the rest of the pack and start a new pack of pills that same day.

2. You may not have your period this month but this is expected. However, if you miss your period 2 months in a row, call your doctor or clinic because you might be pregnant.
3. You **MAY BECOME PREGNANT** if you have sex in the 7 days after you miss pills. You **MUST** use another birth control method (such as condoms, foam, or sponge) as a back-up for those 7 days.

A REMINDER FOR THOSE ON 28-DAY PACKS:

If you forget any of the 7 peach "reminder" pills in Week 4:

THROW AWAY the pills you missed.

Keep taking 1 pill each day until the pack is empty.

You do not need a back-up method.

FINALLY, IF YOU ARE STILL NOT SURE WHAT TO DO ABOUT THE PILLS YOU HAVE MISSED:

Use a BACK-UP METHOD OF BIRTH CONTROL anytime you have sex.

KEEP TAKING ONE "ACTIVE" PILL EACH DAY until you can talk to your doctor or clinic.

Missed periods, spotting or light bleeding

At times, you may not have a period. After you have completed a pack of pills. If you miss 1 period but you have taken the pills exactly as you were supposed to, continue as usual into the next cycle. If you have not taken the pills correctly, and have missed a period, you may be pregnant and you should stop taking the pill until your doctor or clinic determines whether or not you are pregnant. Until you can talk to your doctor or clinic, use an appropriate back-up birth control method. If you miss 2 consecutive periods, you should stop taking the pill until it is determined that you are not pregnant.

Even if spotting or light bleeding should occur, continue taking the pill according to the schedule. Should spotting or light bleeding persist, you should notify your doctor or clinic.

Stopping the pill before surgery or prolonged bed rest

If you are scheduled for surgery or you need to stay in bed for a long period of time you should tell your doctor that you are on the pill. You should stop taking the pill 4 weeks before your operation to avoid an increased risk of blood clots. Talk to your doctor about when you may start taking the pill again.

Starting the pill after pregnancy

After you have a baby it is advisable to wait 4-6 weeks before starting to take the pill. Talk to your doctor about when you

- expected. However, if you miss pills, you should follow the instructions below. If you miss pills, you should follow the instructions below. If you miss pills, you should follow the instructions below.
3. You **MAY** BECOME PREGNANT if you have sex in the 7 days after you miss pills. You **MUST** use another birth control method (such as condoms, foam, or sponge) as a back-up for those 7 days.

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Starting the pill after pregnancy

After you have a baby it is advisable to wait 4-6 weeks before starting to take the pill. Talk to your doctor about when you may start taking the pill after pregnancy.

Pregnancy due to pill failure

When the pill is taken correctly, the expected pregnancy rate is approximately 1% (i.e., 1 pregnancy per 100 women per year). If pregnancy occurs while taking the pill, there is little risk to the fetus. The typical failure rate of large numbers of pill users is less than 3% when women who have missed pills are included. If you become pregnant, you should discuss your pregnancy with your doctor.

Pregnancy after stopping the pill

There may be some delay in becoming pregnant after you stop taking the pill, especially if you had irregular periods before you started using the pill. Your doctor may recommend that you delay becoming pregnant until you have had one or more regular periods.

There does not appear to be any increase in birth defects in newborn babies when pregnancy occurs soon after stopping the pill.

Overdosage

There are no reports of serious illness or side effects in young children who have swallowed a large number of pills. In adults, overdosage may cause nausea and/or bleeding in females. In case of overdosage, contact your doctor, clinic or pharmacist.

Other information

Your doctor or clinic will take a medical and family history and will examine you before prescribing the pill. The physical examination may be delayed to another time if you request it and the health care provider believes that it is a good medical practice to postpone it. You should be reexamined at least once a year. Be sure to inform your doctor or clinic if there is a family history of any of the conditions listed previously in this leaflet. Be sure to keep all appointments with your doctor or clinic because this is a time to determine if there are early signs of side effects from using the pill.

Do not use the pill for any condition other than the one for which it was prescribed. The pill has been prescribed specifically for you, do not give it to others who may want birth control pills.

If you want more information about birth control pills, ask your doctor or clinic. They have a more technical leaflet called **PHYSICIAN LABELING** which you might want to read.

Store at controlled room temperature 15°-30°C (59°-86°F).

SCS Pharmaceuticals

Manufactured for
SCS Pharmaceuticals
Chicago IL 60680 USA
By Syntex (F.P.), Inc.
Hummel PR 00791

©1996, SCS Pharmaceuticals

A08822 • Nov. 20, 1996 • Printed in USA



Trivora®-21 Tablets

(levonorgestrel and ethinyl estradiol tablets, USP) - triphasic regimen

BRIEF SUMMARY

Trivora®-21 Tablets: Each blue tablet (6) contains levonorgestrel 0.05 mg and ethinyl estradiol 0.03 mg, each white tablet (5) contains levonorgestrel 0.075 mg and ethinyl estradiol 0.04 mg and each pink tablet (10) contains levonorgestrel 0.125 mg and ethinyl estradiol 0.03 mg.

Trivora®-28 Tablets: Each blue tablet (6) contains levonorgestrel 0.05 mg and ethinyl estradiol 0.03 mg, each white tablet (5) contains levonorgestrel 0.075 mg and ethinyl estradiol 0.04 mg, each pink tablet (10) contains levonorgestrel 0.125 mg and ethinyl estradiol 0.03 mg and each peach tablet (7) contains inert ingredients.

Oral contraceptives, also known as "birth control pills" or "the pill," are taken to prevent pregnancy and, when taken correctly, have a failure rate of about 1% per year when used without missing any pills. The typical failure rate of large numbers of pill users is less than 3% per year when women who miss pills are included. For most women, oral contraceptives are also free of serious or unpleasant side effects. However, forgetting to take pills considerably increases the chances of pregnancy.

For the majority of women, oral contraceptives can be taken safely, but there are some women who are at high risk of developing certain serious diseases that can be life-threatening or may cause temporary or permanent disability. The risks associated with taking oral contraceptives increase significantly if you:

- Smoke
- Have high blood pressure, diabetes or high cholesterol
- Have or have had clotting disorders, heart attack, stroke, angina pectoris, cancer of the breast or sex organs, jaundice or malignant or benign liver tumors

You should not take the pill if you suspect you are pregnant or have unexplained vaginal bleeding.

Cigarette smoking increases the risk of serious cardiovascular side effects from oral contraceptive use. This risk increases with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women over 35 years of age. Women who use oral contraceptives are strongly advised not to smoke.

Most side effects of the pill are not serious. The most common such effects are nausea, vomiting, bleeding between menstrual periods, weight gain, breast tenderness and difficulty wearing contact lenses. These side effects, especially nausea and vomiting, may subside within the first 3 months of use.

The serious side effects of the pill occur very infrequently, especially if you are in good health and are young. However, you should know that the following medical conditions have been associated with or made worse by the pill:

1. Blood clots in the legs (thrombophlebitis) or lungs (pulmonary embolism), stoppage or rupture of a blood vessel in the brain (stroke), blockage of blood vessels in the heart (heart attack or angina pectoris), eye or other organs of the body. As mentioned above, smoking increases the risk of heart attacks and strokes and subsequent serious medical consequences.
2. Liver tumors, which may rupture and cause severe bleeding. A possible but not definite association has been found with the pill and liver cancer. However, liver cancers are extremely rare. The chance of developing liver cancer from using the pill is thus even rarer.
3. High blood pressure, although blood pressure usually returns to normal when the pill is stopped.

The symptoms associated with these serious side effects are discussed in the detailed leaflet given to you with your supply of pills. Notify your doctor or health care provider if you notice any unusual physical disturbances while taking the pill. In addition, drugs such as rifampin, as well as some anti-convulsants and some antibiotics, may decrease oral contraceptive effectiveness.

Studies to date of women taking the pill have not shown an increase in the incidence of cancer of the breast or cervix. There is, however, insufficient evidence to rule out the possibility that the pill may cause such cancers. Some studies have reported an increase in the risk of developing breast cancer, particularly at a younger age. This increased risk appears to be related to duration of use.

Taking the pill provides some important non-contraceptive health benefits. These include less painful menstruation, less menstrual blood loss and anemia, fewer pelvic infections and fewer cancers of the ovary and the lining of the uterus.

Be sure to discuss any medical condition you may have with your health care provider. Your health care provider will take a medical and family history before prescribing oral contraceptives and will examine you. The physical examination may be delayed to another time if you request it and the health care provider believes that it is a good medical practice to postpone it. You should be reexamined at least once a year while taking oral contraceptives. The detailed patient information leaflet gives you further information which you should read and discuss with your health care provider.

This product (like all oral contraceptives) is intended to prevent pregnancy. It does not protect against transmission of HIV (AIDS) and other sexually transmitted diseases such as ~~chlamydia~~, genital herpes, genital warts, gonorrhea, hepatitis B, and syphilis.

HOW TO TAKE THE PILL

IMPORTANT POINTS TO REMEMBER

BEFORE YOU START TAKING YOUR PILLS:

1. BE SURE TO READ THESE DIRECTIONS:
 - Before you start taking your pills.
 - Anytime you are not sure what to do.
2. THE RIGHT WAY TO TAKE THE PILL IS TO TAKE ONE PILL EVERY DAY AT THE SAME TIME.
 - If you miss pills you could get pregnant. This includes starting the pack late.
 - The more pills you miss, the more likely you are to get pregnant.
3. MANY WOMEN HAVE SPOTTING OR LIGHT BLEEDING, OR MAY FEEL SICK TO THEIR STOMACH DURING THE FIRST 1-3 PACKS OF PILLS.
 - If you feel sick to your stomach, do not stop taking the pill. The problem will usually go away. If it doesn't go away, check with your doctor or clinic.

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traceptives and will examine you. The physical examination may be delayed to another time if you request it and the health care provider believes that it is a good medical practice to postpone it. You should be reexamined at least once a year while taking oral contraceptives. The detailed patient information leaflet gives you further information which you should read and discuss with your health care provider.

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HOW TO TAKE THE PILL

IMPORTANT POINTS TO REMEMBER

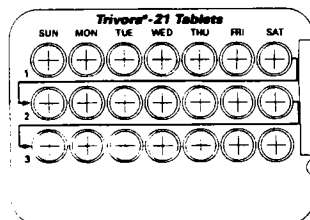
BEFORE YOU START TAKING YOUR PILLS:

1. BE SURE TO READ THESE DIRECTIONS:
Before you start taking your pills.
Anytime you are not sure what to do.
2. THE RIGHT WAY TO TAKE THE PILL IS TO TAKE ONE PILL EVERY DAY AT THE SAME TIME.
If you miss pills you could get pregnant. This includes starting the pack late.
The more pills you miss, the more likely you are to get pregnant.
3. MANY WOMEN HAVE SPOTTING OR LIGHT BLEEDING, OR MAY FEEL SICK TO THEIR STOMACH DURING THE FIRST 1-3 PACKS OF PILLS.
If you feel sick to your stomach, do not stop taking the pill. The problem will usually go away. If it doesn't go away, check with your doctor or clinic.
4. MISSING PILLS CAN ALSO CAUSE SPOTTING OR LIGHT BLEEDING, even when you make up these missed pills.
On the days you take 2 pills to make up for missed pills, you could also feel a little sick to your stomach.
5. IF YOU HAVE VOMITING OR DIARRHEA, for any reason, or IF YOU TAKE SOME MEDICINES, including some antibiotics, your pills may not work as well.
Use a back-up method (such as condoms, foam, or sponge) until you check with your doctor or clinic.
6. IF YOU HAVE TROUBLE REMEMBERING TO TAKE THE PILL, talk to your doctor or clinic about how to make pill-taking easier or about using another method of birth control.
7. IF YOU HAVE ANY QUESTIONS OR ARE UNSURE ABOUT THE INFORMATION IN THIS LEAFLET, call your doctor or clinic.

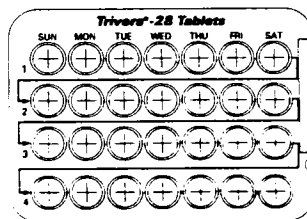
BEFORE YOU START TAKING YOUR PILLS

1. DECIDE WHAT TIME OF DAY YOU WANT TO TAKE YOUR PILL.
It is important to take it at about the same time every day.
2. LOOK AT YOUR PILL PACK TO SEE IF IT HAS 21 OR 28 PILLS.
The 21-pill pack has 21 "active" blue, white and pink pills (with hormones) to take for 3 weeks, followed by 1 week without pills.
The 28-pill pack has 21 "active" blue, white and pink pills (with hormones) to take for 3 weeks, followed by 1 week of reminder peach pills (without hormones).
3. ALSO FIND:
 - 1) where on the pack to start taking pills,
 - 2) in what order to take the pills and
 - 3) the week numbers as shown in the picture below.

Active Pill Colors: Blue, White and Pink



Active Pill Colors: Blue, White and Pink Reminder Pill Color: Peach



4. BE SURE YOU HAVE READY AT ALL TIMES:
ANOTHER KIND OF BIRTH CONTROL (such as condoms, foam, or sponge) to use as a back-up in case you miss pills.
AN EXTRA, FULL PILL PACK.

SCS Pharmaceuticals

Trivora-21 Tablets

Trivora-28 Tablets

(levonorgestrel and ethinyl estradiol tablets, USP) —
triphasic regimen

Patients should be counseled that this product does not protect against HIV infection (AIDS) and other sexually transmitted diseases.



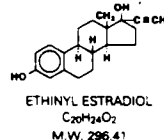
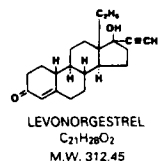
ORAL CONTRACEPTIVE AGENTS

DESCRIPTION

Trivora-21 Tablets provide an oral contraceptive regimen of 6 blue tablets followed by 5 white tablets and 10 pink tablets. Each blue tablet contains levonorgestrel 0.05 mg and ethinyl estradiol 0.03 mg, each white tablet contains levonorgestrel 0.075 mg and ethinyl estradiol 0.04 mg and each pink tablet contains levonorgestrel 0.125 mg and ethinyl estradiol 0.03 mg.

Trivora-28 Tablets provide a continuous oral contraceptive regimen of 6 blue tablets, 5 white tablets, 10 pink tablets and then 7 peach tablets. Each blue tablet contains levonorgestrel 0.05 mg and ethinyl estradiol 0.03 mg, each white tablet contains levonorgestrel 0.075 mg and ethinyl estradiol 0.04 mg, each pink tablet contains levonorgestrel 0.125 mg and ethinyl estradiol 0.03 mg and each peach tablet contains inert ingredients.

Levonorgestrel is a totally synthetic progestogen with the chemical name (13-Ethyl-17-hydroxy-18,19-dinor-17 α -pregn-4-en-20-yn-3-one. Ethinyl estradiol is an estrogen with the chemical name 19-Nor-17 α -pregna-1,3,5(10)-trien-20-yne-3,17-diol. Their structural formulas follow:



The inactive ingredients present in all the tablets are lactose monohydrate, magnesium stearate, povidone, starch (corn) plus the following dyes:

Blue tablet: FD&C Blue #1
Pink tablet: FD&C Red #40
Peach tablet: FD&C Yellow #6

CLINICAL PHARMACOLOGY

Combination oral contraceptives act by suppression of gonadotrophins. Although the primary mechanism of this action is inhibition of ovulation, other alterations include changes in the cervical mucus (which increase the difficulty of sperm entry into the uterus) and the endometrium (which may reduce the likelihood of implantation).

INDICATIONS AND USAGE

Oral contraceptives are indicated for the prevention of pregnancy in women who elect to use this product as a method of contraception.

Oral contraceptives are highly effective. Table I lists the typical accidental pregnancy rates for users of combination oral contraceptives and other methods of contraception.¹ The efficacy of these contraceptive methods, except sterilization, depends upon the reliability with which they are used. Correct and consistent use of methods can result in lower failure rates.

TABLE I: PERCENTAGE OF WOMEN EXPERIENCING A CONTRACEPTIVE FAILURE DURING THE FIRST YEAR OF PERFECT USE AND FIRST YEAR OF TYPICAL USE

Method	% of Women Experiencing an Accidental Pregnancy within the First Year of Use Typical Use ^a	Perfect Use ^b
Chance	85	85
Spermicides	21	6
Periodic abstinence	20	1-9
Withdrawal	19	4
Cap		
Parous	36	26
Nulliparous	18	9

WARNINGS

Cigarette smoking increases the risk of serious cardiovascular side effects from oral contraceptive use. This risk increases with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women over 35 years of age. Women who use oral contraceptives should be strongly advised not to smoke.

The use of oral contraceptives is associated with increased risks of several serious conditions including myocardial infarction, thromboembolism, stroke, hepatic neoplasia, and gallbladder disease, although the risk of stroke and morbidity or mortality is very small in healthy women without underlying risk factors. The risk of morbidity and mortality increases significantly in the presence of other underlying risk factors such as hypertension, hyperlipidemias, hypercholesterolemia, obesity and diabetes.²⁻⁵ Practitioners prescribing oral contraceptives should be familiar with the following information relating to these risks.

The information contained in this package insert is principally based on studies carried out in patients who used oral contraceptives with higher formulations of both estrogens and progestogens than those in common use today. The effect of long-term use of the oral contraceptives with lower formulations of both estrogens and progestogens remains to be determined.

Throughout this labeling, epidemiological studies reported are of two types: retrospective or case control studies and prospective or cohort studies. Case control studies provide a measure of the relative risk of a disease. Relative risk, the ratio of the incidence of a disease among oral contraceptive users to that among non-users, cannot be assessed directly from case control studies, but the odds ratio obtained is a measure of relative risk. The relative risk does not provide information on the actual clinical occurrence of a disease. Cohort studies provide not only a measure of the relative risk but a measure of attributable risk, which is the difference in the incidence of disease between oral contraceptive users and non-users. The attributable risk does provide information about the actual occurrence of a disease in the population. (Adapted from ref. 12 and 13 with the author's permission.) For further information, the reader is referred to a text on epidemiological methods.

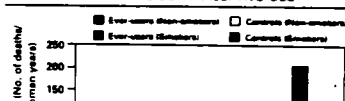
1. THROMBOEMBOLIC DISORDERS AND OTHER VASCULAR PROBLEMS

a. Myocardial Infarction

An increased risk of myocardial infarction has been attributed to oral contraceptive use. This risk is primarily in smokers or women with other underlying risk factors for coronary artery disease such as hypertension, hypercholesterolemia, morbid obesity and diabetes.^{2-5,13} The relative risk of heart attack for current oral contraceptive users has been estimated to be 2 to 6.2.¹⁴⁻¹⁹ The risk is very low under the age of 30. However, there is the possibility of a risk of cardiovascular disease even in very young women who take oral contraceptives.

Smoking in combination with oral contraceptive use has been shown to contribute substantially to the incidence of myocardial infarctions in women in their mid-thirties or older, with smoking accounting for the majority of excess cases.²⁰ Mortality rates associated with circulatory disease have been shown to increase substantially in smokers over the age of 35 and non-smokers over the age of 40 among women who use oral contraceptives (see Table II).¹⁶

TABLE II: CIRCULATORY DISEASE MORTALITY RATES PER 100,000 WOMAN YEARS BY AGE, SMOKING STATUS AND ORAL CONTRACEPTIVE USE



c. Cerebrovascular diseases

An increase in both the relative and attributable risks of cerebrovascular events (thrombotic and hemorrhagic strokes) has been shown in users of oral contraceptives. In general, the risk is greatest among older (>35 years) hypertensive women who also smoke. Hypertension was found to be a risk factor for both users and non-users for both types of strokes while smoking interacted to increase the risk for hemorrhagic strokes.³⁴

In a large study, the relative risk of thrombotic strokes has been shown to range from 3 for normotensive users to 14 for users with severe hypertension.³⁵ The relative risk of hemorrhagic stroke is reported to be 1.2 for non-smokers who used oral contraceptives, 2.6 for smokers who did not use oral contraceptives, 7.6 for smokers who used oral contraceptives, 1.8 for normotensive users and 25.7 for users with severe hypertension.³⁵ The attributable risk also is greater in women in their mid-thirties or older and among smokers.¹³

d. Dose-related risk of vascular disease from oral contraceptives

A positive association has been observed between the amount of estrogen and progestogen in oral contraceptives and the risk of vascular disease.³⁶⁻³⁸ A decline in serum high-density lipoproteins (HDL) has been reported with many progestational agents.²²⁻²⁴ A decline in serum high-density lipoproteins has been associated with an increased incidence of ischemic heart disease.³⁹ Because estrogens increase HDL cholesterol, the net effect of an oral contraceptive depends on a balance achieved between doses of estrogen and progestogen and the nature and absolute amount of progestogens used in the contraceptives. The amount of both hormones should be considered in the choice of an oral contraceptive.³⁷

Minimizing exposure to estrogen and progestogen is in keeping with good principles of therapeutics. For any particular estrogen/progestogen combination, the dosage regimen prescribed should be one which contains the least amount of estrogen and progestogen that is compatible with a low failure rate and the needs of the individual patient. New acceptors of oral contraceptive agents should be started on preparations containing the lowest estrogen content that produces satisfactory results for the individual.

e. Persistence of risk of vascular disease

There are three studies which have shown persistence of risk of vascular disease for ever-users of oral contraceptives.^{17,34,40} In a study in the United States, the risk of developing myocardial infarction after discontinuing oral contraceptives persists for at least 9 years for women 40-49 years who had used oral contraceptives for 5 or more years, but this increased risk was not demonstrated in other age groups.¹⁷ In another study in Great Britain, the risk of developing cerebrovascular disease persisted for at least 6 years after discontinuation of oral contraceptives, although excess risk was very small.⁴⁰ There is a significantly increased relative risk of subarachnoid hemorrhage after termination of use of oral contraceptives.³⁴ However, these studies were performed with oral contraceptive formulations containing 50 µg or higher of estrogen.

2. ESTIMATES OF MORTALITY FROM CONTRACEPTIVE USE

One study gathered data from a variety of sources which have estimated the mortality rates associated with different methods of contraception at different ages (see Table III).⁴¹ These estimates include the combined risk of death associated with contraceptive methods plus the risk attributable to pregnancy in the event of method failure. Each method of contraception has its specific benefits and risks. The study concluded that with the exception of oral contraceptive users 35 and older who smoke and 40 and older who do not smoke, mortality associated with all methods of birth control is low and below that associated with childbirth. The observation of a possible increase in risk of mortality with age for oral contraceptive users is based on data gathered in the 1970s—but not reported in the U.S. until 1983.^{16,41} However, current clinical practice involves the use of lower estrogen dose formulations combined with careful restriction of oral contraceptive use to women who do not have the various risk factors listed in this labeling.

Because of these changes in practice and, also, because of some limited new data which suggest that the risk of cardiovascular disease with the use of oral contraceptives may now be less than previously observed,^{7,9,19} the Fertility and Maternal Health Drugs Advisory Committee was asked to review the topic in 1989. The Committee concluded that although cardiovascular disease risks may be increased with oral contraceptive use after age 40 in healthy non-smoking women (even with the newer low-dose formulations), there are greater potential health risks associated with pregnancy in older women and with the alternative surgical and medical procedures which may be necessary if such women do not have access to effective and acceptable means of contraception.

Therefore, the Committee recommended that the benefits of oral contraceptive use by healthy non-smoking women over 40 may outweigh the possible risks. Of course,

Some studies have been associated with the use of oral contraceptives. However, there is no evidence that the use of oral contraceptives is associated with an increased risk of cancer. In some of the studies, the use of oral contraceptives was associated with an increased risk of cancer, but these studies were not controlled for other factors. In some of the studies, the use of oral contraceptives was associated with an increased risk of cancer, but these studies were not controlled for other factors.

4. HEPATIC NEOPLASIA: Benign hepatic neoplasia is a rare condition. In the United States, the attributable risk is estimated to be 100,000 for use of oral contraceptives for 5 years or more. It may cause death.

5. OCULAR LESIONS: There have been reports of ocular lesions associated with oral contraceptives. These lesions include retinal thrombosis, papilledema, and other ocular conditions. These lesions may be permanent and may require medical attention.

6. ORAL CONTRACEPTIVE EARLY PREGNANCY: Extensive epidemiological studies have shown no increased risk of oral contraceptive use during pregnancy. However, some studies have suggested a slight increase in the risk of miscarriage and stillbirth. These studies are inconclusive.

7. GALLBLADDER DISEASE: There have been reports of gallbladder disease associated with oral contraceptives. This disease may be more common in women who use oral contraceptives. It may require surgical treatment.

8. CARBOHYDRATE INTOLERANCE: Oral contraceptives may cause carbohydrate intolerance in women with pre-existing diabetes. This condition may require adjustment of insulin therapy.

9. ELEVATED BLOOD PRESSURE: Some women may experience an increase in blood pressure while using oral contraceptives. This increase may be temporary and may require medical attention.

10. HEADACHE: Headache is a common side effect of oral contraceptives. It may be mild or severe. If the headache is severe or persistent, medical attention should be sought.

CLINICAL PHARMACOLOGY

Combination oral contraceptives act by suppression of gonadotrophins. Although the primary mechanism of this action is inhibition of ovulation, other alterations include changes in the cervical mucus (which increase the difficulty of sperm entry into the uterus) and the endometrium (which may reduce the likelihood of implantation).

INDICATIONS AND USAGE

Oral contraceptives are indicated for the prevention of pregnancy in women who elect to use this product as a method of contraception.

Oral contraceptives are highly effective. Table I lists the typical accidental pregnancy rates for users of combination oral contraceptives and other methods of contraception.¹ The efficacy of these contraceptive methods, except sterilization, depends upon the reliability with which they are used. Correct and consistent use of methods can result in lower failure rates.

TABLE I: PERCENTAGE OF WOMEN EXPERIENCING A CONTRACEPTIVE FAILURE DURING THE FIRST YEAR OF PERFECT USE AND FIRST YEAR OF TYPICAL USE

Method	Typical Use ^a	Perfect Use ^b
Chance	85	85
Spermicides	21	6
Periodic abstinence	20	1-9
Withdrawal	19	4
Cap		
Parous	36	26
Nulliparous	18	9
Sponge		
Parous	36	20
Nulliparous	18	9
Diaphragm	18	6
Condom		
Female	21	5
Male	12	3
Pill	3	
Progestin only		0.5
Combined		0.1
IUD		
Progestosterone	2	1.5
Copper T 380A	0.8	0.6
Injection (Depo-Provera)	0.3	0.3
Implants (Norplant)	0.09	0.09
Female sterilization	0.4	0.4
Male sterilization	0.15	0.10

^aAdapted with permission¹.

^bAmong typical couples who initiate use of a method (not necessarily for the first time), the percentage who experience an accidental pregnancy during the first year if they do not stop use for any other reason.

^cAmong couples who initiate use of a method (not necessarily for the first time) and who use it perfectly (both consistently and correctly), the percentage who experience an accidental pregnancy during the first year if they do not stop use for any other reason.

CONTRAINDICATIONS

Oral contraceptives should not be used in women who have the following conditions:

- Thrombophlebitis or thromboembolic disorders
- A past history of deep vein thrombophlebitis or thromboembolic disorders
- Cerebral vascular or coronary artery disease
- Known or suspected carcinoma of the breast
- Carcinoma of the endometrium or other known or suspected estrogen-dependent neoplasia
- Undiagnosed abnormal genital bleeding
- Cholestatic jaundice of pregnancy or jaundice with prior pill use
- Hepatic adenomas, carcinomas or benign liver tumors
- Known or suspected pregnancy

the relative risk but a measure of attributable risk, which is the difference in the incidence of disease between oral contraceptive users and non-users. The attributable risk does provide information about the actual occurrence of a disease in the population. (Adapted from ref. 12 and 13 with the author's permission.) For further information, the reader is referred to a text on epidemiological methods.

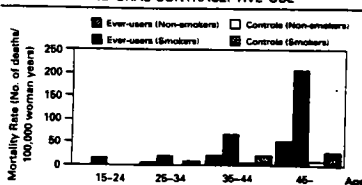
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Smoking in combination with oral contraceptive use has been shown to contribute substantially to the incidence of myocardial infarctions in women in their mid-thirties or older, with smoking accounting for the majority of excess cases.²⁰ Mortality rates associated with circulatory disease have been shown to increase substantially in smokers over the age of 35 and non-smokers over the age of 40 among women who use oral contraceptives (see Table II).¹⁶

TABLE II: CIRCULATORY DISEASE MORTALITY RATES PER 100,000 WOMAN YEARS BY AGE, SMOKING STATUS AND ORAL CONTRACEPTIVE USE



Adapted from P.M. Layde and V. Berai, Table V¹⁶

Oral contraceptives may compound the effects of well-known risk factors such as hypertension, diabetes, hyperlipidemia, hypercholesterolemia, age and obesity.^{3,13,21} In particular, some progestogens are known to decrease HDL cholesterol and cause glucose intolerance, while estrogens may create a state of hyperinsulinism.²¹⁻²⁵ Oral contraceptives have been shown to increase blood pressure among users (see WARNINGS, section 9). Similar effects on risk factors have been associated with an increased risk of heart disease. Oral contraceptives must be used with caution in women with cardiovascular disease risk factors.

b. Thromboembolism

An increased risk of thromboembolic and thrombotic disease associated with the use of oral contraceptives is well established. Case control studies have found the relative risk of users compared to non-users to be 3 for the first episode of superficial venous thrombosis, 4 to 11 for deep vein thrombosis or pulmonary embolism, and 1.5 to 6 for women with predisposing conditions for venous thromboembolic disease.^{12,13,26-31} Cohort studies have shown the relative risk to be somewhat lower, about 3 for new cases and about 4.5 for new cases requiring hospitalization.³² The risk of thromboembolic disease due to oral contraceptives is not related to length of use and disappears after pill use is stopped.¹²

A 2- to 6-fold increase in relative risk of post-operative thromboembolic complications has been reported with the use of oral contraceptives. The relative risk of venous thrombosis in women who have predisposing conditions is twice that of women without such medical conditions.⁸³ If feasible, oral contraceptives should be discontinued at least 4 weeks prior to and for 2 weeks after elective surgery and during and following prolonged immobilization. Since the immediate postpartum period also is associated with an increased risk of thromboembolism, oral contraceptives should be started no earlier than 4 to 6 weeks after delivery in women who elect not to breast feed.³³

2. ESTIMATES OF MORTALITY FROM CONTRACEPTIVE USE

One study gathered data from a variety of sources which have estimated the mortality rates associated with different methods of contraception at different ages (see Table III).⁴ These estimates include the combined risk of death associated with contraceptive methods plus the risk attributable to pregnancy in the event of method failure. Each method of contraception has its specific benefits and risks. The study concluded that with the exception of oral contraceptive users 35 and older who smoke and 40 and older who do not smoke, mortality associated with all methods of birth control is low and below that associated with childbirth. The observation of a possible increase in risk of mortality with age for oral contraceptive users is based on data gathered in the 1970s—but not reported in the U.S. until 1983.^{16,41} However, current clinical practice involves the use of lower estrogen dose formulations combined with careful restriction of oral contraceptive use to women who do not have the various risk factors listed in this labeling.

Because of these changes in practice and, also, because of some limited new data which suggest that the risk of cardiovascular disease with the use of oral contraceptives may now be less than previously observed,^{78,79} the Fertility and Maternal Health Drugs Advisory Committee was asked to review the topic in 1989. The Committee concluded that although cardiovascular disease risks may be increased with oral contraceptive use after age 40 in healthy non-smoking women (even with the newer low-dose formulations), there are greater potential health risks associated with pregnancy in older women and with the alternative surgical and medical procedures which may be necessary if such women do not have access to effective and acceptable means of contraception.

Therefore, the Committee recommended that the benefits of oral contraceptive use by healthy non-smoking women over 40 may outweigh the possible risks. Of course, older women, as all women who take oral contraceptives, should take the lowest possible dose formulation that is effective.⁸⁰

TABLE III: ESTIMATED ANNUAL NUMBER OF BIRTH-RELATED OR METHOD-RELATED DEATHS ASSOCIATED WITH CONTROL OF FERTILITY PER 100,000 NONSTERILE WOMEN, BY FERTILITY CONTROL METHOD ACCORDING TO AGE

Method of control and outcome	15-19	20-24	25-29	30-34	35-39	40-44
No fertility control methods*	7.0	7.4	9.1	14.8	25.7	28.2
Oral contraceptives non-smoker**	0.3	0.5	0.9	7.9	13.8	31.6
Oral contraceptives smoker**	2.2	3.4	6.6	13.5	5.1	117.2
IUD*	0.8	0.8	1.0	1.0	1.4	1.4
Condom*	1.1	1.6	0.7	0.2	0.3	0.4
Diaphragm/Spermicide*	1.9	1.2	1.2	1.3	2.2	2.8
Periodic abstinence*	2.5	1.6	1.6	1.7	2.9	3.6

*Deaths are birth-related

**Deaths are method-related

Estimates adapted from H.W. Ory, Table 3⁴¹

3. CARCINOMA OF THE REPRODUCTIVE ORGANS AND BREASTS

Numerous epidemiological studies have been performed on the incidence of breast, endometrial, ovarian and cervical cancer in women using oral contraceptives. The overwhelming evidence in the literature suggests that use of oral contraceptives is not associated with an increase in the risk of developing breast cancer, regardless of the age and parity of first use or with most of the marketed brands and doses.⁴²⁻⁴⁴ The Cancer and Steroid Hormone (CASH) study also showed no latent effect on the risk of breast cancer for at least a decade following long-term use.⁴⁵ A few studies have shown a slightly increased relative risk of developing breast cancer,⁴⁴⁻⁴⁷ although the methodology of these studies, which included differences in examination of users and non-users and differences in age at start of use, has been questioned.⁴⁷⁻⁴⁹ Some studies have reported an increased relative risk of developing breast cancer, particularly at a younger age. This increased relative risk appears to be related to duration of use.^{81,82}

4. CARBOHYDRATE AND LIPID METABOLIC EFFECTS

Oral contraceptives have been shown to cause intolerance in a significant percentage of users of contraceptives containing greater than 75 µg of estrogen.⁵⁰ hyperinsulinism, while lower doses of estrogen cause glucose intolerance.⁵¹ Progestogens increase insulin resistance and create insulin resistance, this effect varies with different progestational agents.^{52,53} However, in diabetic women, oral contraceptives appear to effect on fasting blood glucose.⁵⁴ Because of these effects, pre-diabetic and diabetic women should be carefully observed while taking oral contraceptives.

Some women may develop persistent hypertension while on the pill.⁷² As discussed earlier (see Warnings, sections 1a, and 1d), changes in serum lipids and lipoprotein levels have been reported in contraceptive users.⁷³

5. ELEVATED BLOOD PRESSURE

An increase in blood pressure has been reported in taking oral contraceptives and this increase is more in older oral contraceptive users and with cumulative use.^{73,84} Data from the Royal College of General Practitioners and subsequent randomized trials have shown the incidence of hypertension increases with increasing concentrations of progestogens.

Women with a history of hypertension or hypertension-related diseases or renal disease should be encouraged to use another method of contraception. If women use oral contraceptive methods, they should be monitored, and if significant elevation of blood pressure occurs, contraceptives should be discontinued. For most elevated blood pressure will return to normal after oral contraceptives and there is no difference in the incidence of hypertension among ever- and never-users.

6. HEADACHE

The onset or exacerbation of migraine or development of headache with a new pattern which is recurrent, persistent or severe requires discontinuation of oral contraceptive evaluation of the cause.

7. BLEEDING IRREGULARITIES

Breakthrough bleeding and spotting are sometimes observed in patients on oral contraceptives, especially in the first 3 months of use. Non-hormonal causes should be considered and adequate diagnostic measures taken to rule out malignancy or pregnancy in the event of breakthrough bleeding, as in the case of any abnormal vaginal bleeding, if pathology has been excluded, time or a change in formulation may solve the problem. In the event of amenorrhea, pregnancy should be ruled out.

Some women may encounter post-pill amenorrhea, dysmenorrhea, especially when such a condition exists.

PRECAUTIONS

GENERAL

Patients should be counseled that this product does not protect against HIV infection (AIDS) and other sexually transmitted diseases.

1. PHYSICAL EXAMINATION AND FOLLOW-UP

It is good medical practice for all women to have history and physical examinations, including women on oral contraceptives. The physical examination, if requested by the woman and judged appropriate by the clinician, should include reference to blood pressure, breasts, abdomen and pelvic organs, including cervical cytology, and relevant laboratory tests. In case of undiagnosed, persistent or recurrent abnormal vaginal bleeding, appropriate measures should be taken to rule out malignancy. Women with a strong history of breast cancer or who have breast nodules should be monitored with particular care.

2. LIPID DISORDERS

Women who are being treated for hyperlipidemia should be followed closely if they elect to use oral contraceptives. Some progestogens may elevate LDL levels and may have a beneficial effect on the total lipoprotein profile.

3. LIVER FUNCTION

If jaundice develops in any woman receiving oral contraceptives the medication should be discontinued. Steroid hormones may be poorly metabolized in patients with impaired liver function.

Some studies suggest that oral contraceptive use has been associated with an increase in the risk of cervical intraepithelial neoplasia in some populations of women.⁵⁰⁻⁵³ However, there continues to be controversy about the extent to which such findings may be due to differences in sexual behavior and other factors.

In spite of many studies of the relationship between oral contraceptive use and breast or cervical cancers, a cause and effect relationship has not been established.

4. HEPATIC NEOPLASIA

Benign hepatic adenomas are associated with oral contraceptive use although the incidence of benign tumors is rare in the United States. Indirect calculations have estimated the attributable risk to be in the range of 3.3 cases per 100,000 for users, a risk that increases after 4 or more years of use.⁵⁴ Rupture of rare, benign, hepatic adenomas may cause death through intra-abdominal hemorrhage.⁵⁵⁻⁵⁶

Studies in the United States and Britain have shown an increased risk of developing hepatocellular carcinoma in long-term (>8 years) oral contraceptive users.⁵⁷⁻⁵⁹ However, these cancers are extremely rare in the United States and the attributable risk (the excess incidence) of liver cancers in oral contraceptive users approaches less than 1 per 1,000,000 users.

5. OCULAR LESIONS

There have been clinical case reports of retinal thrombosis associated with the use of oral contraceptives. Oral contraceptives should be discontinued if there is unexplained partial or complete loss of vision; onset of proptosis or diplopia; papilledema; or retinal vascular lesions. Appropriate diagnostic and therapeutic measures should be undertaken immediately.

6. ORAL CONTRACEPTIVE USE BEFORE OR DURING EARLY PREGNANCY

Extensive epidemiological studies have revealed no increased risk of birth defects in women who have used oral contraceptives prior to pregnancy.⁶⁰⁻⁶² Studies also do not suggest a teratogenic effect, particularly insofar as cardiac anomalies and limb reduction defects are concerned, when taken inadvertently during early pregnancy.^{60,61,63,64}

The administration of oral contraceptives to induce withdrawal bleeding should not be used as a test for pregnancy. Oral contraceptives should not be used during pregnancy to treat threatened or habitual abortion.

It is recommended that for any patient who has missed 2 consecutive periods, pregnancy should be ruled out before continuing oral contraceptive use. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the first missed period. Oral contraceptive use should be discontinued if pregnancy is confirmed.

7. GALLBLADDER DISEASE

Earlier studies have reported an increased lifetime relative risk of gallbladder surgery in users of oral contraceptives and estrogens.⁶⁵⁻⁶⁶ More recent studies, however, have shown that the relative risk of developing gallbladder disease among oral contraceptive users may be minimal.⁶⁷ The recent findings of minimal risk may be related to the use of oral contraceptive formulations containing lower hormonal doses of estrogens and progestogens.⁶⁸

8. CARBOHYDRATE AND LIPID METABOLIC EFFECTS

Oral contraceptives have been shown to cause glucose intolerance in a significant percentage of users.²⁵ Oral contraceptives containing greater than 75 µg of estrogen cause hyperinsulinism, while lower doses of estrogen cause less glucose intolerance.⁷⁰ Progestogens increase insulin secretion and create insulin resistance, this effect varying with different progestational agents.^{25,71} However, in the non-diabetic woman, oral contraceptives appear to have no effect on fasting blood glucose.⁶⁹ Because of these demonstrated effects, prediabetic and diabetic women should be carefully observed while taking oral contraceptives.

Some women may develop persistent hypertriglyceridemia while on the pill.⁷² As discussed earlier (see **WARNINGS**, sections 1a. and 1d.), changes in serum triglycerides and lipoprotein levels have been reported in oral contraceptive users.²³

9. ELEVATED BLOOD PRESSURE

An increase in blood pressure has been reported in women taking oral contraceptives and this increase is more likely in older oral contraceptive users and with continued use.^{73,84} Data from the Royal College of General Practitioners and subsequent randomized trials have shown that the incidence of hypertension increases with increasing concentrations of progestogens.

Women with a history of hypertension or hypertension-related diseases or renal disease should be encouraged to use another method of contraception. If women elect to use oral contraceptives, they should be monitored closely and if significant elevation of blood pressure occurs, oral contraceptives should be discontinued. For most women, elevated blood pressure will return to normal after stopping oral contraceptives and there is no difference in the occurrence of hypertension among ever- and never-users.⁷³⁻⁷⁵

10. HEADACHE

The onset or exacerbation of migraine or development of headache with a new pattern which is recurrent, persistent or severe requires discontinuation of oral contraceptives and evaluation of the cause.

11. BLEEDING DISORDERS

4. FLUID RETENTION

Oral contraceptives may cause some degree of fluid retention. They should be prescribed with caution, and only with careful monitoring, in patients with conditions which might be aggravated by fluid retention.

5. EMOTIONAL DISORDERS

Women with a history of depression should be carefully observed and the drug discontinued if depression recurs to a serious degree.

6. CONTACT LENSES

Contact lens wearers who develop visual changes or changes in lens tolerance should be assessed by an ophthalmologist.

7. DRUG INTERACTIONS

Reduced efficacy and increased incidence of breakthrough bleeding and menstrual irregularities have been associated with concomitant use of rifampin. A similar association, though less marked, has been suggested with barbiturates, phenylbutazone, phenytoin sodium, and possibly with griseofulvin, ampicillin and tetracyclines.⁷⁶

8. INTERACTIONS WITH LABORATORY TESTS

Certain endocrine and liver function tests and blood components may be affected by oral contraceptives:

- Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability.
- Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, as measured by protein-bound iodine (PBI), T₄ by column or by radioimmunoassay. Free T₃ resin uptake is decreased, reflecting the elevated TBG. Free T₄ concentration is unaltered.
- Other binding proteins may be elevated in serum.
- Sex steroid binding globulins are increased and result in elevated levels of total circulating sex steroids and corticoids; however, free or biologically active levels remain unchanged.
- Triglycerides may be increased.
- Glucose tolerance may be decreased.
- Serum folate levels may be depressed by oral contraceptive therapy. This may be of clinical significance if a woman becomes pregnant shortly after discontinuing oral contraceptives.

9. CARCINOGENESIS

See **WARNINGS** section.

10. PREGNANCY

Pregnancy Category X. See **CONTRAINDICATIONS** and **WARNINGS** sections.

11. NURSING MOTHERS

Small amounts of oral contraceptive steroids have been identified in the milk of nursing mothers and a few adverse effects on the child have been reported, including jaundice and breast enlargement. In addition, oral contraceptives given in the postpartum period may interfere with lactation by decreasing the quantity and quality of breast milk. If possible, the nursing mother should be advised not to use oral contraceptives while breast feeding. She should use another method of contraception since breast feeding provides only partial protection from becoming pregnant and this partial protection decreases significantly as the breast feeds for longer periods of time. The nursing mother should consider starting oral contraceptives only after she has weaned her child completely.

INFORMATION FOR THE PATIENT

See **PATIENT LABELING** printed below.

ADVERSE REACTIONS

An increased risk of the following serious adverse reactions has been associated with the use of oral contraceptives (see **WARNINGS** section):

- Thrombophlebitis
- Arterial thromboembolism
- Pulmonary embolism
- Myocardial infarction
- Cerebral hemorrhage
- Cerebral thrombosis
- Hypertension
- Gallbladder disease
- Hepatic adenomas, carcinomas or benign liver tumors

There is evidence of an association between the following conditions and the use of oral contraceptives, although additional confirmatory studies are needed:

- Mesenteric thrombosis
- Retinal thrombosis

The following adverse reactions have been reported in patients receiving oral contraceptives and are believed to be drug-related:

- Nausea
- Vomiting
- Gastrointestinal symptoms (such as abdominal cramps and bloating)
- Breakthrough bleeding

OVERDOSAGE

Serious ill effects have not been reported following acute ingestion of large doses of oral contraceptives by young children. Overdosage may cause nausea, and withdrawal bleeding may occur in females.

HEALTH BENEFITS FROM ORAL CONTRACEPTIVES

The following health benefits related to the use of oral contraceptives are supported by epidemiological studies which largely utilized oral contraceptive formulations containing estrogen doses exceeding 0.035 mg of ethinyl estradiol or 0.05 mg of mestranol.⁶⁻¹¹

Effects on menses:

- Increased menstrual cycle regularity
- Decreased blood loss and decreased incidence of iron deficiency anemia
- Decreased incidence of dysmenorrhea

Effects related to inhibition of ovulation:

- Decreased incidence of functional ovarian cysts
- Decreased incidence of ectopic pregnancies

Effects from long-term use:

- Decreased incidence of fibroadenomas and fibrocystic disease of the breast
- Decreased incidence of acute pelvic inflammatory disease
- Decreased incidence of endometrial cancer
- Decreased incidence of ovarian cancer

DOSAGE AND ADMINISTRATION

To achieve maximum contraceptive effectiveness, oral contraceptives must be taken exactly as directed and at intervals not exceeding 24 hours.

21-Day Schedule: For a DAY 1 START, count the first day of menstrual flow as Day 1 and the first blue tablet is then taken on Day 1. For a SUNDAY START, when menstrual flow begins on or before Sunday, the first blue tablet is taken on that day. With either a DAY 1 START or SUNDAY START, 1 blue tablet is taken for 6 days, then 1 white tablet for 5 days, then 1 pink tablet for 10 days. With either a DAY 1 START or SUNDAY START, 1 tablet is taken each day at the same time for 21 days. No tablets are taken for 7 days, then, whether bleeding has stopped or not, a new course is started on 1 tablet a day for 21 days. This institutes a 3 weeks on, 1 week off dosage regimen.

28-Day Schedule: For a DAY 1 START, count the first day of menstrual flow as Day 1 and the first blue tablet is then taken on Day 1. For a SUNDAY START when menstrual flow begins on or before Sunday, the first blue tablet is taken on that day. With either a DAY 1 START or SUNDAY START, 1 blue tablet is taken for 6 days, then 1 white tablet for 5 days, then 1 pink tablet for 10 days, then 1 peach (inert) tablet for 7 days. With either a DAY 1 START or SUNDAY START, 1 tablet is taken each day at the same time for 28 days. After all 28 tablets are taken, whether bleeding has stopped or not, the same dosage schedule is repeated beginning on the following day.

INSTRUCTIONS TO PATIENTS

- To achieve maximum contraceptive effectiveness, the oral contraceptive pill must be taken exactly as directed and at intervals not exceeding 24 hours.
- Important: Women should be instructed to use an additional method of protection until after the first 7 days of administration in the initial cycle.
- Due to the normally increased risk of thromboembolism occurring postpartum, women should be instructed not to initiate treatment with oral contraceptives earlier than 4 weeks after a full-term delivery. If pregnancy is terminated in the first 12 weeks, the patient should be instructed to start oral contraceptives immediately or within 7 days. If pregnancy is terminated after 12 weeks, the patient should be instructed to start oral contraceptives after 2 weeks.^{33,77}
- If spotting or breakthrough bleeding should occur, the patient should continue the medication according to the schedule. Should spotting or breakthrough bleeding persist, the patient should notify her physician.
- If the patient misses 1 pill, she should be instructed to take it as soon as she remembers and then take the next pill at the regular time. The patient should be advised that missing a pill can cause spotting or light bleeding and that she may be a little sick to her stomach on the days she takes the missed pill with her regularly scheduled pill. If the patient has missed more than one pill, see **DETAILED PATIENT LABELING: HOW TO TAKE THE PILL, WHAT TO DO IF YOU MISS PILLS**.
- Use of oral contraceptives in the event of a missed menstrual period:

- If the patient has not adhered to the prescribed dosage regimen, the possibility of pregnancy should be considered after the first missed period and oral contraceptives should be withheld until pregnancy has been ruled out.
- If the patient has adhered to the prescribed regimen and misses 2 consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen.

intolerance in a significant percentage of users.²⁵ Oral contraceptives containing greater than 75 µg of estrogen cause hyperinsulinism, while lower doses of estrogen cause glucose intolerance.⁷⁰ Progestogens increase insulin secretion and create insulin resistance, this effect varying with different progestational agents.^{25,71} However, in the non-diabetic woman, oral contraceptives appear to have no effect on fasting blood glucose.⁶⁹ Because of these demonstrated effects, prediabetic and diabetic women should be carefully observed while taking oral contraceptives.

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An increase in blood pressure has been reported in women taking oral contraceptives and this increase is more likely in older oral contraceptive users and with continued use.^{73,74} Data from the Royal College of General Practitioners and subsequent randomized trials have shown that the incidence of hypertension increases with increasing concentrations of progestogens.

Women with a history of hypertension or hypertension-related diseases or renal disease should be encouraged to use another method of contraception. If women elect to use oral contraceptives, they should be monitored closely and if significant elevation of blood pressure occurs, oral contraceptives should be discontinued. For most women, elevated blood pressure will return to normal after stopping oral contraceptives and there is no difference in the occurrence of hypertension among ever- and never-users.⁷³⁻⁷⁵

10. HEADACHE

The onset or exacerbation of migraine or development of headache with a new pattern which is recurrent, persistent or severe requires discontinuation of oral contraceptives and evaluation of the cause.

11. BLEEDING IRREGULARITIES

Breakthrough bleeding and spotting are sometimes encountered in patients on oral contraceptives, especially during the first 3 months of use. Non-hormonal causes should be considered and adequate diagnostic measures taken to rule out malignancy or pregnancy in the event of breakthrough bleeding, as in the case of any abnormal vaginal bleeding. If pathology has been excluded, time or a change to another formulation may solve the problem. In the event of amenorrhea, pregnancy should be ruled out.

Some women may encounter post-pill amenorrhea or oligomenorrhea, especially when such a condition was pre-existent.

PRECAUTIONS

GENERAL

Patients should be counseled that this product does not protect against HIV infection (AIDS) and other sexually transmitted diseases.

1. PHYSICAL EXAMINATION AND FOLLOW-UP

It is good medical practice for all women to have annual history and physical examinations, including women using oral contraceptives. The physical examination, however, may be deferred until after initiation of oral contraceptives if requested by the woman and judged appropriate by the clinician. The physical examination should include special reference to blood pressure, breasts, abdomen and pelvic organs, including cervical cytology, and relevant laboratory tests. In case of undiagnosed, persistent or recurrent abnormal vaginal bleeding, appropriate measures should be conducted to rule out malignancy. Women with a strong family history of breast cancer or who have breast nodules should be monitored with particular care.

2. LIPID DISORDERS

Women who are being treated for hyperlipidemias should be followed closely if they elect to use oral contraceptives. Some progestogens may elevate LDL levels and may render the control of hyperlipidemias more difficult.

3. LIVER FUNCTION

If jaundice develops in any woman receiving oral contraceptives the medication should be discontinued. Steroid hormones may be poorly metabolized in patients with impaired liver function.

method of contraception since breast feeding provides only partial protection from becoming pregnant and this partial protection decreases significantly as she breast feeds for longer periods of time. The nursing mother should consider starting oral contraceptives only after she has weaned her child completely.

INFORMATION FOR THE PATIENT

See **PATIENT LABELING** printed below.

ADVERSE REACTIONS

An increased risk of the following serious adverse reactions has been associated with the use of oral contraceptives (see **WARNINGS** section):

- Thrombophlebitis
- Arterial thromboembolism
- Pulmonary embolism
- Myocardial infarction
- Cerebral hemorrhage
- Cerebral thrombosis
- Hypertension
- Gallbladder disease
- Hepatic adenomas, carcinomas or benign liver tumors

There is evidence of an association between the following conditions and the use of oral contraceptives, although additional confirmatory studies are needed:

- Mesenteric thrombosis
- Retinal thrombosis

The following adverse reactions have been reported in patients receiving oral contraceptives and are believed to be drug-related:

- Nausea
- Vomiting
- Gastrointestinal symptoms (such as abdominal cramps and bloating)
- Breakthrough bleeding
- Spotting
- Change in menstrual flow
- Amenorrhea
- Temporary infertility after discontinuation of treatment
- Edema
- Melasma which may persist
- Breast changes: tenderness, enlargement, secretion
- Change in weight (increase or decrease)
- Change in cervical erosion and secretion
- Diminution in lactation when given immediately postpartum
- Cholestatic jaundice
- Migraine
- Rash (allergic)
- Mental depression
- Reduced tolerance to carbohydrates
- Vaginal candidiasis
- Change in corneal curvature (steepening)
- Intolerance to contact lenses

The following adverse reactions have been reported in users of oral contraceptives and the association has been neither confirmed nor refuted:

- Pre-menstrual syndrome
- Cataracts
- Changes in appetite
- Cystitis-like syndrome
- Headache
- Nervousness
- Dizziness
- Hirsutism
- Loss of scalp hair
- Erythema multiforme
- Erythema nodosum
- Hemorrhagic eruption
- Vaginitis
- Porphyria
- Impaired renal function
- Hemolytic uremic syndrome
- Budd-Chiari syndrome
- Acne
- Changes in libido
- Colitis

Contraceptive pills must be taken exactly as directed and at intervals not exceeding 24 hours.

• Important: Women should be instructed to use an additional method of protection until after the first 7 days of administration in the initial cycle.

• Due to the normally increased risk of thromboembolism occurring postpartum, women should be instructed not to initiate treatment with oral contraceptives earlier than 4 weeks after a full-term delivery. If pregnancy is terminated in the first 12 weeks, the patient should be instructed to start oral contraceptives immediately or within 7 days. If pregnancy is terminated after 12 weeks, the patient should be instructed to start oral contraceptives after 2 weeks.^{33,77}

• If spotting or breakthrough bleeding should occur, the patient should continue the medication according to the schedule. Should spotting or breakthrough bleeding persist, the patient should notify her physician.

• If the patient misses 1 pill, she should be instructed to take it as soon as she remembers and then take the next pill at the regular time. The patient should be advised that missing a pill can cause spotting or light bleeding and that she may be a little sick to her stomach on the days she takes the missed pill with her regularly scheduled pill. If the patient has missed more than one pill, see **DETAILED PATIENT LABELING: HOW TO TAKE THE PILL, WHAT TO DO IF YOU MISS PILLS**.

• Use of oral contraceptives in the event of a missed menstrual period:

1. If the patient has not adhered to the prescribed dosage regimen, the possibility of pregnancy should be considered after the first missed period and oral contraceptives should be withheld until pregnancy has been ruled out.
2. If the patient has adhered to the prescribed regimen and misses 2 consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen.

HOW SUPPLIED

Trivora®-21 Tablets are available in 21-tablet blister cards. Six blister cards are packaged in a carton. All the tablets are unscored, round in shape. The blue tablets are debossed with "SCS" on one side and "50/30" on the other side. The white tablets are debossed with "SCS" on one side and "75/40" on the other side. The pink tablets are debossed with "SCS" on one side and "125/30" on the other side.

Trivora®-28 Tablets are available in 28-tablet blister cards. Six blister cards are packaged in a carton. Trivora®-28 Tablets contain the same 21 active tablets as Trivora®-21 Tablets with 7 additional inert tablets. The peach inert tablets are unscored, round in shape with "SCS" debossed on one side and "P" on the other side.

CAUTION: Federal law prohibits dispensing without prescription.

Store at controlled room temperature 15°-30°C (59°-86°F).

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DETAILED PATIENT LABELING

This product (like all oral contraceptives) is intended to prevent pregnancy. It does not protect against HIV infection (AIDS) and other sexually transmitted diseases.

INTRODUCTION

Any woman who considers using oral contraceptives ("birth control pills" or "the pill") should understand the benefits and risks of using this form of birth control. This leaflet will give you much of the information you will need to make this decision and also will help you determine if you are at risk of developing any of the serious side effects of the pill. It will tell you how to use the pill properly so that it will be as effective as possible. However, this leaflet is not a replacement for a careful discussion between you and your health care provider. You should discuss the information provided in this leaflet with him or her, both when you first start taking the pill and during your regular visits. You also should follow the advice of your health care provider with regard to regular checkups while you are on the pill.

WHO SHOULD NOT TAKE ORAL CONTRACEPTIVES

Cigarette smoking increases the risk of serious cardiovascular side effects from oral contraceptive use. This risk increases with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women over 35 years of age. Women who use oral contraceptives are strongly advised not to smoke.

Some women should not use the pill. For example, you should not take the pill if you are pregnant or think you may be pregnant. You also should not use the pill if you have any of the following conditions:

- A history of heart attack or stroke
- Blood clots in the legs (thrombophlebitis), brain (stroke), lungs (pulmonary embolism) or eyes
- A history of blood clots in the deep veins of your legs
- Chest pain (angina pectoris)
- Known or suspected breast cancer or cancer of the lining of the uterus, cervix or vagina
- Unexplained vaginal bleeding (until a diagnosis is reached by your doctor)
- Yellowing of the whites of the eyes or of the skin (jaundice) during pregnancy or during previous use of the pill
- Liver tumor (benign or cancerous)
- Known or suspected pregnancy

Tell your health care provider if you have ever had any of these conditions. Your health care provider can recommend a safer method of birth control.

OTHER CONSIDERATIONS BEFORE TAKING ORAL CONTRACEPTIVES

Tell your health care provider if you have or have had:

- Breast nodules, fibrocystic disease of the breast, an abnormal breast x-ray or mammogram
- Diabetes
- Elevated cholesterol or triglycerides
- High blood pressure
- Migraine or other headaches or epilepsy
- Mental depression
- Gallbladder, heart or kidney disease
- History of scanty or irregular menstrual periods

Women with any of these conditions should be checked often by their health care provider if they choose to use oral contraceptives.

Also, be sure to inform your doctor or health care provider if you smoke or are on any medications.

RISKS OF TAKING ORAL CONTRACEPTIVES

1. Risk of developing blood clots
Blood clots and blockage of blood vessels are the most serious side effects of taking oral contraceptives. In particular, a clot in the legs can cause thrombophlebitis and a clot that travels to the lungs can cause a sudden blockage of the vessel carrying blood to the lungs. Rarely, clots occur in the blood vessels of the eye and may cause blindness, double vision, or impaired vision.

If you take oral contraceptives and need elective surgery, need to stay in bed for a prolonged illness or have recently delivered a baby, you may be at risk of developing blood clots. You should consult your doctor about stopping oral contraceptives three to four weeks before surgery and not taking oral contraceptives for two weeks after surgery or during bed rest. You should also not take oral contraceptives soon after delivery of a baby. It is advisable to wait for at least four weeks after delivery if you are not breast feeding. If you are breast feeding, you should wait until you have weaned your child before using the pill (see GENERAL PRECAUTIONS, While Breast Feeding).

2. Heart attacks and strokes
Oral contraceptives may increase the tendency to develop strokes (stoppage or rupture of blood vessels in the brain) and angina pectoris and heart attacks (blockage of blood vessels in the heart). Any of these conditions can cause death or temporary or permanent disability.

Smoking greatly increases the possibility of suffering heart attacks and strokes. Furthermore, smoking and the use of oral contraceptives greatly increase the chances of developing and dying of heart disease.

3. Gallbladder disease

Oral contraceptive users may have a greater risk than non-users of having gallbladder disease, although this risk may be related to pills containing high doses of estrogen.

4. Liver tumors

In rare cases, oral contraceptives can cause benign but dangerous liver tumors. These benign liver tumors can rupture and cause fatal internal bleeding. In addition, a possible but not definite association has been found with the pill and liver cancers in 2 studies in which a few women who developed these very rare cancers were found to have used oral contraceptives for long periods. However, liver cancers are extremely rare. The chance of developing liver cancer from using the pill is thus very small.

5. Cancer of the reproductive organs and breasts

There is, at present, no confirmed evidence that oral contraceptives increase the risk of cancer of the reproductive organs in human studies. Several studies have found that

be seen from the table that for women aged 15 to 39 the risk of death was highest with pregnancy (7-26 deaths per 100,000 women, depending on age). Among pill users who do not smoke the risk of death is always lower than that associated with pregnancy for any age group, although over the age of 40 the risk increases to 32 deaths per 100,000 women compared to 28 associated with pregnancy at that age. However, for pill users who smoke and are over the age of 35 the estimated number of deaths exceeds those for other methods of birth control. If a woman is over the age of 40 and smokes, her estimated risk of death is 4 times higher (117/100,000 women) than the estimated risk associated with pregnancy (28/100,000 women) in that age group.

The suggestion that women over 40 who don't smoke should not take oral contraceptives is based on information from older high-dose pills and on less selective use of pills than is practiced today. An Advisory Committee of the FDA discussed this issue in 1989 and recommended that the benefits of oral contraceptive use by healthy, non-smoking women over 40 years of age may outweigh the possible risks. However, all women, especially older women, are cautioned to use the lowest dose pill that is effective.

WARNING SIGNALS

If any of these adverse effects occurs while you are taking oral contraceptives, call your doctor immediately:

- Sharp chest pain, coughing of blood or sudden shortness of breath (indicating a possible clot in the lung)
- Pain in the calf (indicating a possible clot in the leg)
- Crushing chest pain or heaviness in the chest (indicating a possible heart attack)
- Sudden severe headache or vomiting, dizziness or fainting, disturbances of vision or speech, weakness or numbness in an arm or leg (indicating a possible stroke)
- Sudden partial or complete loss of vision (indicating a possible clot in the eye)
- Breast lumps (indicating possible breast cancer or fibrocystic disease of the breast; ask your doctor or health care provider to show you how to examine your breasts)
- Severe pain or tenderness in the stomach area (indicating a possible ruptured liver tumor)
- Difficulty in sleeping, weakness, lack of energy, fatigue or change in mood (possibly indicating severe depression)
- Jaundice or a yellowing of the skin or eyeballs, accompanied frequently by fever, fatigue, loss of appetite, dark-colored urine or light-colored bowel movements (indicating possible liver problems)

SIDE EFFECTS OF ORAL CONTRACEPTIVES

1. Vaginal bleeding

Irregular vaginal bleeding or spotting may occur while you are taking the pill. Irregular bleeding may vary from slight staining between menstrual periods to breakthrough bleeding which is a flow much like a regular period. Irregular bleeding occurs most often during the first few months of oral contraceptive use but may also occur after you have been taking the pill for some time. Such bleeding may be temporary and usually does not indicate any serious problems. It is important to continue taking your pills on schedule. If the bleeding occurs in more than 1 cycle or lasts for more than a few days, talk to your doctor or health care provider.

2. Contact lenses

If you wear contact lenses and notice a change in vision or an inability to wear your lenses, contact your doctor or health care provider.

3. Fluid retention

Oral contraceptives may cause edema (fluid retention) with swelling of the fingers or ankles and may raise your blood pressure. If you experience fluid retention, contact your doctor or health care provider.

4. Melasma

A spotty darkening of the skin is possible, particularly of the face.

5. Other side effects

Other side effects may include change in appetite, headache, nervousness, depression, dizziness, loss of scalp hair, rash and vaginal infections.

If any of these side effects occurs, contact your doctor or health care provider.

GENERAL PRECAUTIONS

1. Missed periods and use of oral contraceptives before or during early pregnancy

At times you may not menstruate regularly after you have completed taking a cycle of pills. If you have taken your pills regularly and miss 1 menstrual period, continue taking your pills for the next cycle but be sure to inform your health care provider before doing so. If you have not taken the pills daily as instructed and miss 1 menstrual period, or if you miss 2 consecutive menstrual periods, you may be pregnant. Check with your health care provider immediately to determine whether you are pregnant. Do not continue to take oral contraceptives until you are sure you are not pregnant, but continue to use another method of birth control.

There is no conclusive evidence that oral contraceptives

Progestin, New York, Raven Press, 1980. 72. Wynn, V., et al.: *Lancet* 2:720-723, 1966. 73. Fisch, I.R., et al.: *JAMA* 237(23):2499-2503, 1977. 74. Laragh, J.H.: *Am J Obstet Gynecol* 126(1):141-147, 1976. 75. Ramcharan, S., et al.: *Pharmacology of Steroid Contraceptive Drugs*. New York, Raven Press, 1977. 76. Stockley, I.: *Pharm J* 216:140-143, 1976. 77. Dickey, R.P.: *Managing Contraceptive Pill Patients*. Oklahoma, Creative Informatics Inc., 1984. 78. Porter, J.B., Hunter, J., Jick, H., et al.: *Obstet Gynecol* 1985; 66:1-4. 79. Porter, J.B., Hershel, J., Walker, A.M.: *Obstet Gynecol* 1987;70:29-32. 80. Fertility and Maternal Health Drugs Advisory Committee, F.D.A., October, 1989. 81. Schlesselman, J., Stadel, B.V., Murray, P., Lai, S.: *Breast cancer in relation to early use of oral contraceptives*. *JAMA* 1988; 259:1828-1833. 82. Hennekens, C.H., Speizer, F.E., Lipnick, R.J., Rosner, B., Bain, C., Belanger, C., Stampfer, M.J., Willett, W., Peto, R.: *A case-control study of oral contraceptive use and breast cancer*. *JNCI* 1984;72:39-42. 83. Royal College of General Practitioners: *Oral contraceptives, venous thrombosis, and varicose veins*. *J Coll Gen Pract* 28:393-399, 1978. 84. Royal College of General Practitioners: *Oral Contraception Study: Effect on hypertension and benign breast disease of progestogen component in combined oral contraceptives*. *Lancet* 1:624, 1977.

DETAILED PATIENT LABELING

This product (like all oral contraceptives) is intended to prevent pregnancy. It does not protect against HIV infection (AIDS) and other sexually transmitted diseases.

INTRODUCTION

Any woman who considers using oral contraceptives ("birth control pills" or "the pill") should understand the benefits and risks of using this form of birth control. This leaflet will give you much of the information you will need to make this decision and also will help you determine if you are at risk of developing any of the serious side effects of the pill. It will tell you how to use the pill properly so that it will be as effective as possible. However, this leaflet is not a replacement for a careful discussion between you and your health care provider. You should discuss the information provided in this leaflet with him or her, both when you first start taking the pill and during your regular visits. You also should follow the advice of your health care provider with regard to regular checkups while you are on the pill.

EFFECTIVENESS OF ORAL CONTRACEPTIVES

Oral contraceptives are used to prevent pregnancy and are more effective than other non-surgical methods of birth control. When they are taken correctly, without missing any pills, the chance of becoming pregnant is less than 1% (1 pregnancy per 100 women per year of use). Typical failure rates are actually 3% per year. The chance of becoming pregnant increases with each missed pill during a menstrual cycle.

In comparison, typical failure rates for other nonsurgical methods of birth control during the first year are as follows:

Comparison of reversible contraceptive methods: Percentage of women experiencing a contraceptive failure (pregnancy) during the first year of use.		
Method	Average Use	Correct Use
No contraception	85	85
Spermicides	21	6
Periodic abstinence	20	1-9*
Withdrawal	19	4
Cap		
Given birth	36	26
Never given birth	18	9
Sponge		
Given birth	36	20
Never given birth	18	9
Diaphragm	18	6
Condom		
Female	21	5
Male	12	3
Pill	3	
Progestin only		0.5
Combined		0.1
IUD		
Progesterone	2	1.5
Copper T 380A	0.8	0.6
Injectables	0.3	0.3
Implant	0.09	0.09

Adapted with permission.

* Depending on method (calendar, ovulation, symptom-thermal)

blood clot that travels to the lungs can cause a sudden blockage of the vessel carrying blood to the lungs. Rarely, clots occur in the blood vessels of the eye and may cause blindness, double vision, or impaired vision.

If you take oral contraceptives and need elective surgery, need to stay in bed for a prolonged illness or have recently delivered a baby, you may be at risk of developing blood clots. You should consult your doctor about stopping oral contraceptives three to four weeks before surgery and not taking oral contraceptives for two weeks after surgery or during bed rest. You should also not take oral contraceptives soon after delivery of a baby. It is advisable to wait for at least four weeks after delivery if you are not breast feeding. If you are breast feeding, you should wait until you have weaned your child before using the pill (see GENERAL PRECAUTIONS, While Breast Feeding).

2. Heart attacks and strokes

Oral contraceptives may increase the tendency to develop strokes (stoppage or rupture of blood vessels in the brain) and angina pectoris and heart attacks (blockage of blood vessels in the heart). Any of these conditions can cause death or temporary or permanent disability.

Smoking greatly increases the possibility of suffering heart attacks and strokes. Furthermore, smoking and the use of oral contraceptives greatly increase the chances of developing and dying of heart disease.

3. Gallbladder disease

Oral contraceptive users may have a greater risk than non-users of having gallbladder disease, although this risk may be related to pills containing high doses of estrogen.

4. Liver tumors

In rare cases, oral contraceptives can cause benign but dangerous liver tumors. These benign liver tumors can rupture and cause fatal internal bleeding. In addition, a possible but not definite association has been found with the pill and liver cancers in 2 studies in which a few women who developed these very rare cancers were found to have used oral contraceptives for long periods. However, liver cancers are extremely rare. The chance of developing liver cancer from using the pill is thus even rarer.

5. Cancer of the reproductive organs and breasts

There is, at present, no confirmed evidence that oral contraceptives increase the risk of cancer of the reproductive organs in human studies. Several studies have found no overall increase in the risk of developing breast cancer. However, women who use oral contraceptives and have a strong family history of breast cancer or who have breast nodules or abnormal mammograms should be closely followed by their doctors. Some studies have reported an increase in the risk of developing breast cancer, particularly at a younger age. This increased risk appears to be related to duration of use.

Some studies have found an increase in the incidence of cancer of the cervix in women who use oral contraceptives. However, this finding may be related to factors other than the use of oral contraceptives.

ESTIMATED RISK OF DEATH FROM A BIRTH CONTROL METHOD OR PREGNANCY

All methods of birth control and pregnancy are associated with a risk of developing certain diseases which may lead to disability or death. An estimate of the number of deaths associated with different methods of birth control and pregnancy has been calculated and is shown in the following table:

ESTIMATED ANNUAL NUMBER OF BIRTH-RELATED OF: METHOD-RELATED DEATHS ASSOCIATED WITH CONTROL OF FERTILITY PER 100,000 NON-STERILE WOMEN, BY FERTILITY CONTROL METHOD ACCORDING TO AGE

Method of control and outcome	15-19	20-24	25-29	30-34	35-39	40-44
No fertility control methods*	7.0	7.4	9.1	14.8	25.7	28.2
Oral contraceptives non-smoker**	0.3	0.5	0.9	1.9	13.8	31.6
Oral contraceptives smoker**	2.2	3.4	6.6	13.5	51.1	117.2
IUD**	0.8	0.8	1.0	1.0	1.4	1.4
Condom*	1.1	1.6	0.7	0.2	0.3	0.4
Diaphragm/Spermicide*	1.9	1.2	1.2	1.3	2.2	2.8
Periodic abstinence*	2.5	1.6	1.6	1.7	2.9	3.6

* Deaths are birth-related

** Deaths are method-related

In the above table, the risk of death from any birth control method is less than the risk of childbirth except for oral contraceptive users over the age of 35 who smoke and pill users over the age of 40 even if they do not smoke. It can

ing which is a few more days or two or three. Bleeding occurs most often during the first few months of oral contraceptive use but may also occur after you have been taking the pill for some time. Such bleeding may be temporary and usually does not indicate any serious problems. It is important to continue taking your pills on schedule. If the bleeding occurs in more than 1 cycle or lasts for more than a few days, talk to your doctor or health care provider.

2. Contact lenses

If you wear contact lenses and notice a change in vision or an inability to wear your lenses, contact your doctor or health care provider.

3. Fluid retention

Oral contraceptives may cause edema (fluid retention) with swelling of the fingers or ankles and may raise your blood pressure. If you experience fluid retention, contact your doctor or health care provider.

4. Melasma

A spotty darkening of the skin is possible, particularly of the face.

5. Other side effects

Other side effects may include change in appetite, headache, nervousness, depression, dizziness, loss of scalp hair, rash and vaginal infections.

If any of these side effects occurs, contact your doctor or health care provider.

GENERAL PRECAUTIONS

1. Missed periods and use of oral contraceptives before or during early pregnancy

At times you may not menstruate regularly after you have completed taking a cycle of pills. If you have taken your pills regularly and miss 1 menstrual period, continue taking your pills for the next cycle but be sure to inform your health care provider before doing so. If you have not taken the pills daily as instructed and miss 1 menstrual period, or if you miss 2 consecutive menstrual periods, you may be pregnant. Check with your health care provider immediately to determine whether you are pregnant. Do not continue to take oral contraceptives until you are sure you are not pregnant, but continue to use another method of birth control.

There is no conclusive evidence that oral contraceptive use is associated with an increase in birth defects when taken inadvertently during early pregnancy. Previously, a few studies had reported that oral contraceptives might be associated with birth defects but these studies have not been confirmed. Nevertheless, oral contraceptives or any other drugs should not be used during pregnancy unless clearly necessary and prescribed by your doctor. You should check with your doctor about risks to your unborn child from any medication taken during pregnancy.

2. While breast feeding

If you are breast feeding, consult your doctor before starting oral contraceptives. Some of the drug will be passed on to the child in the milk. A few adverse effects on the child have been reported, including yellowing of the skin (jaundice) and breast enlargement. In addition, oral contraceptives may decrease the amount and quality of your milk. If possible, do not use oral contraceptives while breast feeding. You should use another method of contraception since breast feeding provides only partial protection from becoming pregnant and this partial protection decreases significantly as you breast feed for longer periods of time. You should consider starting oral contraceptives only after you have weaned your child completely.

3. Laboratory tests

If you are scheduled for any laboratory tests, tell your doctor you are taking birth control pills. Certain blood tests may be affected by birth control pills.

4. Drug interactions

Certain drugs may interact with birth control pills to make them less effective in preventing pregnancy or cause an increase in breakthrough bleeding. Such drugs include rifampin; drugs used for epilepsy such as barbiturates (for example, phenobarbital) and phenytoin (Dilantin is one brand of this drug); phenylbutazone (Butazolidin is one brand of this drug) and possibly certain antibiotics. You may need to use additional contraception when you take drugs which can make oral contraceptives less effective.

5. Sexually transmitted diseases

This product (like all oral contraceptives) is intended to prevent pregnancy. It does not protect against transmission of HIV (AIDS) and other sexually transmitted diseases such as chlamydia, genital herpes, genital warts, gonorrhea, hepatitis B, and syphilis.

6

HOW TO TAKE THE PILL

IMPORTANT POINTS TO REMEMBER

BEFORE YOU START TAKING YOUR PILLS:

1. BE SURE TO READ THESE DIRECTIONS:

- Before you start taking your pills, you are not sure what to do.
- THE RIGHT WAY TO TAKE THE PILL IS TO TAKE ONE PILL EVERY DAY AT THE SAME TIME. If you miss pills you could get pregnant. This includes starting the pack late. The more pills you miss, the more likely you are to get pregnant.

3. MANY WOMEN HAVE SPOTTING OR LIGHT BLEEDING, OR MAY FEEL SICK TO THEIR STOMACH DURING THE FIRST 1-3 PACKS OF PILLS.

If you feel sick to your stomach, do not stop taking the pill. The problem will usually go away. If it doesn't go away, check with your doctor or clinic.

4. MISSING PILLS CAN ALSO CAUSE SPOTTING OR LIGHT BLEEDING, even when you make up these missed pills.

On the days you take 2 pills to make up for missed pills, you could also feel a little sick to your stomach.

5. IF YOU HAVE VOMITING OR DIARRHEA, for any reason, or IF YOU TAKE SOME MEDICINES, including some antibiotics, your pills may not work as well.

Use a back-up method (such as condoms, foam, or sponge) until you check with your doctor or clinic.

6. IF YOU HAVE TROUBLE REMEMBERING TO TAKE THE PILL, talk to your doctor or clinic about how to make pill-taking easier or about using another method of birth control.

7. IF YOU HAVE ANY QUESTIONS OR ARE UNSURE ABOUT THE INFORMATION IN THIS LEAFLET, call your doctor or clinic.

BEFORE YOU START TAKING YOUR PILLS

1. DECIDE WHAT TIME OF DAY YOU WANT TO TAKE YOUR PILL.

It is important to take it at about the same time every day.

2. LOOK AT YOUR PILL PACK TO SEE IF IT HAS 21 OR 28 PILLS:

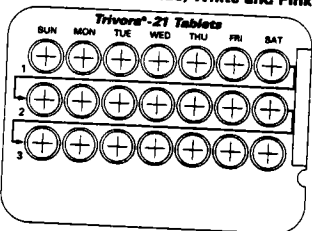
The 21-pill pack has 21 "active" blue, white and pink pills (with hormones) to take for 3 weeks, followed by 1 week without pills.

The 28-pill pack has 21 "active" blue, white and pink pills (with hormones) to take for 3 weeks, followed by 1 week of reminder peach pills (without hormones).

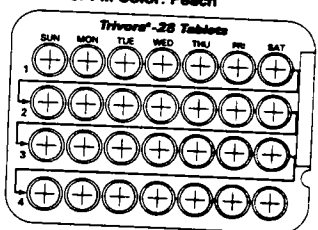
3. ALSO FIND:

- where on the pack to start taking pills,
- in what order to take the pills and
- the week numbers as shown in the picture below.

Active Pill Colors: Blue, White and Pink



Active Pill Colors: Blue, White and Pink Reminder Pill Color: Peach



4. BE SURE YOU HAVE READY AT ALL TIMES:

ANOTHER KIND OF BIRTH CONTROL (such as condoms, foam, or sponge) to use as a back-up in case you miss pills.

AN EXTRA, FULL PILL PACK.

WHEN TO START THE FIRST PACK OF PILLS

You have a choice of which day to start taking your first pack of pills. Decide with your doctor or clinic which is the best day for you. Pick a time of day which will be easy to remember.

Day 1 Start:

- Take the first "active" blue pill of the first pack during the first 24 hours of your period.
- You will not need to use a back-up method of birth control, since you are starting the pill on the first day of your period.

If you MISS 2 pink "active" pills in a row in THE 3rd WEEK:

1. If you are a Day 1 Starter:

THROW OUT the rest of the pill pack and start a new pack that same day.

If you are a Sunday Starter:

Keep taking 1 pill every day until Sunday. On Sunday, THROW OUT the rest of the pack and start a new pack of pills that same day.

2. You may not have your period this month but this is expected. However, if you miss your period 2 months in a row, call your doctor or clinic because you might be pregnant.

3. You MAY BECOME PREGNANT if you have sex in the 7 days after you miss pills. You MUST use another birth control method (such as condoms, foam, or sponge) as a back-up for those 7 days.

If you MISS 3 OR MORE blue, white or pink "active" pills in a row (during the first 3 weeks):

1. If you are a Day 1 Starter:

THROW OUT the rest of the pill pack and start a new pack of pills that same day.

If you are a Sunday Starter:

Keep taking 1 pill every day until Sunday. On Sunday, THROW OUT the rest of the pack and start a new pack of pills that same day.

2. You may not have your period this month but this is expected. However, if you miss your period 2 months in a row, call your doctor or clinic because you might be pregnant.

3. You MAY BECOME PREGNANT if you have sex in the 7 days after you miss pills. You MUST use another birth control method (such as condoms, foam, or sponge) as a back-up for those 7 days.

A REMINDER FOR THOSE ON 28-DAY PACKS:

If you forget any of the 7 peach "reminder" pills in Week 4: THROW AWAY the pills you missed.

Keep taking 1 pill each day until the pack is empty. You do not need a back-up method.

FINALLY, IF YOU ARE STILL NOT SURE WHAT TO DO ABOUT THE PILLS YOU HAVE MISSED:

Use a BACK-UP METHOD anytime you have sex.

KEEP TAKING ONE "ACTIVE" PILL EACH DAY until you can reach your doctor or clinic.

6. Missed periods, spotting or light bleeding

At times, you may not have a period after you have completed a pack of pills. If you miss 1 period but you have taken the pills exactly as you were supposed to, continue as usual into the next cycle. If you have not taken the pills correctly, and have missed a period, you may be pregnant and you should stop taking the pill until your doctor or clinic determines whether or not you are pregnant. Until you can talk to your doctor or clinic, use an appropriate back-up birth control method. If you miss 2 consecutive periods, you should stop taking the pill until it is determined that you are not pregnant.

Even if spotting or light bleeding should occur, continue taking the pill according to the schedule. Should spotting or light bleeding persist, you should notify your doctor or clinic.

7. Stopping the pill before surgery or prolonged bed rest

If you are scheduled for surgery or you need to stay in bed for a long period of time you should tell your doctor that you are on the pill. You should stop taking the pill four weeks before your operation to avoid an increased risk of blood clots. Talk to your doctor about when you may start taking the pill again.

8. Starting the pill after pregnancy

After you have a baby it is advisable to wait 4-6 weeks before starting to take the pill. Talk to your doctor about when you may start taking the pill after pregnancy.

9. Pregnancy due to pill failure

When the pill is taken correctly, the expected pregnancy rate is approximately 1% (i.e., 1 pregnancy per 100 women per year). If pregnancy occurs while taking the pill, there is little risk to the fetus. The typical failure rate of large numbers of pill users is less than 3% when women who have missed pills are included. If you become pregnant, you should discuss your pregnancy with your doctor.

10. Pregnancy after stopping the pill

There may be some delay in becoming pregnant after you stop taking the pill, especially if you had irregular periods before you started using the pill. Your doctor may recommend that you delay becoming pregnant until you have had one or more regular periods.

There does not appear to be any increase in birth defects in newborn babies when pregnancy occurs soon after stopping the pill.

11. Overdosage

Serious ill effects have not been reported following ingestion of large doses of oral contraceptives by young children. Overdosage may cause nausea and withdrawal bleeding in females. In case of overdosage, contact your health care provider or pharmacist.

12. Other information

Your doctor or clinic will take a medical and family history and will examine you before prescribing the pill. The nurse,

Oral contraceptives, also known as "birth control pills" or "the pill," are taken to prevent pregnancy and, when taken correctly, have a failure rate of about 1% per year when used without missing any pills. The typical failure rate of large numbers of pill users is less than 3% per year when women who miss pills are included. For most women, oral contraceptives are also free of serious or unpleasant side effects. However, forgetting to take oral contraceptives considerably increases the chances of pregnancy.

For the majority of women, oral contraceptives can be taken safely, but there are some women who are at high risk of developing certain serious diseases that can be life-threatening or may cause temporary or permanent disability. The risks associated with taking oral contraceptives increase significantly if you:

- Smoke
- Have high blood pressure, diabetes or high cholesterol
- Have or have had clotting disorders, heart attack, stroke, angina pectoris, cancer of the breast or sex organs, jaundice or malignant or benign liver tumors

You should not take the pill if you suspect you are pregnant or have unexplained vaginal bleeding.

Cigarette smoking increases the risk of serious cardiovascular side effects from oral contraceptive use. This risk increases with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women over 35 years of age. Women who use oral contraceptives are strongly advised not to smoke.

Most side effects of the pill are not serious. The most common such effects are nausea, vomiting, bleeding between menstrual periods, weight gain, breast tenderness and difficulty wearing contact lenses. These side effects, especially nausea and vomiting, may subside within the first 3 months of use.

The serious side effects of the pill occur very infrequently, especially if you are in good health and are young. However, you should know that the following medical conditions have been associated with or made worse by the pill:

- Blood clots in the legs (thrombophlebitis) or lungs (pulmonary embolism), stoppage or rupture of a blood vessel in the brain (stroke), blockage of blood vessels in the heart (heart attack or angina pectoris), eye or other organs of the body. As mentioned above, smoking increases the risk of heart attacks and strokes and subsequent serious medical consequences.
- Liver tumors, which may rupture and cause severe bleeding. A possible but not definite association has been found with the pill and liver cancer. However, liver cancers are extremely rare. The chance of developing liver cancer from using the pill is thus even rarer.
- High blood pressure, although blood pressure usually returns to normal when the pill is stopped.

The symptoms associated with these serious side effects are discussed in the detailed leaflet given to you with your supply of pills. Notify your doctor or health care provider if you notice any unusual physical disturbances while taking the pill. In addition, drugs such as rifampin, as well as some anti-convulsants and some antibiotics, may decrease oral contraceptive effectiveness.

Studies to date of women taking the pill have not shown an increase in the incidence of cancer of the breast or cervix. There is, however, insufficient evidence to rule out the possibility that the pill may cause such cancers. Some studies have reported an increase in the risk of developing breast cancer, particularly at a younger age. This increased risk appears to be related to duration of use.

Taking the pill provides some important non-contraceptive health benefits. These include less painful menstruation, less menstrual blood loss and anemia, fewer pelvic infections and fewer cancers of the ovary and the lining of the uterus.

Be sure to discuss any medical condition you may have with your health care provider. Your health care provider will take a medical and family history before prescribing oral contraceptives and will examine you. The physical examination may be delayed to another time if you request it and the health care provider believes that it is a good medical practice to postpone it. You should be reexamined at least once a year while taking oral contraceptives. The detailed patient information leaflet gives you further information which you should read and discuss with your health care provider.

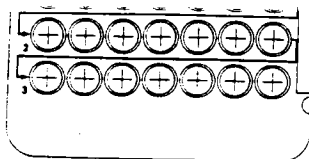
HOW TO TAKE THE PILL

See full text of HOW TO TAKE THE PILL which is printed in full in the Detailed Patient Labeling.

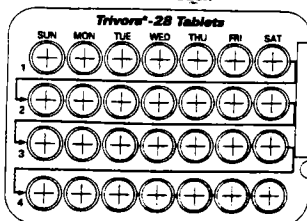
Revised: Nov. 20, 1996

Manufactured for
SCS Pharmaceuticals
Chicago IL 60680 USA
By Syntex (F.P.) Inc.
Hummel, PR 00791

Address medical inquiries to:



Active Pill Colors: Blue, White and Pink
Reminder Pill Color: Peach



4. BE SURE YOU HAVE READY AT ALL TIMES:
ANOTHER KIND OF BIRTH CONTROL (such as condoms,
foam, or sponge) to use as a back-up in case you miss
pills.
AN EXTRA, FULL PILL PACK.

WHAT TO DO DURING THE MONTH

You have a choice of which day to start taking your first
pack of pills. Decide with your doctor or clinic which is the
best day for you. Pick a time of day which will be easy to
remember.

Day 1 Start:

1. Take the first "active" blue pill of the first pack during
the first 24 hours of your period.
2. You will not need to use a back-up method of birth con-
trol, since you are starting the pill at the beginning of
your period.

Sunday Start:

1. Take the first "active" blue pill of the first pack on the
Sunday after your period starts, even if you are still bleed-
ing. If your period begins on Sunday, start the pack that
same day.
2. Use another method of birth control as a back-up method
if you have sex anytime from the Sunday you start your
first pack until the next Sunday (7 days). Condoms, foam,
or the sponge are good back-up methods of birth control.

WHAT TO DO DURING THE MONTH

1. TAKE ONE PILL AT THE SAME TIME EVERY DAY
UNTIL THE PACK IS EMPTY.

Do not skip pills even if you are spotting or bleeding
between monthly periods or feel sick to your stomach
(nausea).

Do not skip pills even if you do not have sex very often.

2. WHEN YOU FINISH A PACK OR SWITCH YOUR
BRAND OF PILLS:

21 pills: Wait 7 days to start the next pack. You will prob-
ably have your period during that week. Be sure that no
more than 7 days pass between 21-day packs.

28 pills: Start the next pack on the day after your last
"reminder" pill. Do not wait any days between packs.

WHAT TO DO IF YOU MISS PILLS

If you **MISS 1** blue, white or pink "active" pill:

1. Take it as soon as you remember. Take the next pill at
your regular time. This means you may take 2 pills in 1
day.

2. You do not need to use a back-up birth control method
if you have sex.

If you **MISS 2** blue or white "active" pills in a row in **WEEK
1 OR WEEK 2** of your pack:

1. Take 2 pills on the day you remember and 2 pills the next
day.

2. Then take 1 pill a day until you finish the pack.

3. You **MAY BECOME PREGNANT** if you have sex in the
7 days after you miss pills. You **MUST** use another birth
control method (such as condoms, foam, or sponge) as
a back-up for those 7 days.

of light bleeding persist, you should notify your doctor or
clinic.

7. Stopping the pill before surgery or prolonged bed rest

If you are scheduled for surgery or you need to stay in bed
for a long period of time you should tell your doctor that
you are on the pill. You should stop taking the pill four
weeks before your operation to avoid an increased risk of
blood clots. Talk to your doctor about when you may start
taking the pill again.

8. Starting the pill after pregnancy

After you have a baby it is advisable to wait 4-6 weeks
before starting to take the pill. Talk to your doctor about
when you may start taking the pill after pregnancy.

9. Pregnancy due to pill failure

When the pill is taken correctly, the expected pregnancy
rate is approximately 1% (i.e., 1 pregnancy per 100 women
per year). If pregnancy occurs while taking the pill, there is
little risk to the fetus. The typical failure rate of large num-
bers of pill users is less than 3% when women who have
missed pills are included. If you become pregnant, you
should discuss your pregnancy with your doctor.

10. Pregnancy after stopping the pill

There may be some delay in becoming pregnant after you
stop taking the pill, especially if you had irregular periods
before you started using the pill. Your doctor may recom-
mend that you delay becoming pregnant until you have had
one or more regular periods.

There does not appear to be any increase in birth defects
in newborn babies when pregnancy occurs soon after stop-
ping the pill.

11. Overdose

Serious ill effects have not been reported following inges-
tion of large doses of oral contraceptives by young children.
Overdose may cause nausea and withdrawal bleeding in
females. In case of overdose, contact your health care
provider or pharmacist.

12. Other information

Your doctor or clinic will take a medical and family history
and will examine you before prescribing the pill. The phys-
ical examination may be delayed to another time if you
request it and the health care provider believes that it is a
good medical practice to postpone it. You should be reex-
amined at least once a year. Be sure to inform your doctor
or clinic if there is a family history of any of the conditions
listed previously in this leaflet. Be sure to keep all appoint-
ments with your doctor or clinic because this is a time to
determine if there are early signs of side effects from using
the pill.

Do not use the pill for any condition other than the one
for which it was prescribed. The pill has been prescribed
specifically for you, do not give it to others who may want
birth control pills.

HEALTH BENEFITS

In addition to preventing pregnancy, use of oral contracep-
tives may provide certain health benefits. They are:

- Menstrual cycles may become more regular
- Blood flow during menstruation may be lighter and less
iron may be lost. Therefore, anemia due to iron deficiency
is less likely to occur
- Pain or other symptoms during menstruation may be
encountered less frequently
- Ectopic (tubal) pregnancy may occur less frequently
- Non-cancerous cysts or lumps in the breast may occur
less frequently
- Acute pelvic inflammatory disease may occur less fre-
quently
- Oral contraceptive use may provide some protection
against developing two forms of cancer: cancer of the
ovaries and cancer of the lining of the uterus

If you want more information about birth control pills, ask
your doctor or clinic. They have a more technical leaflet
called **PHYSICIAN LABELING** which you might want to
read.

Store at controlled room temperature: 15°-30°C (59°-86°F).

BRIEF SUMMARY

PATIENT PACKAGE INSERT

This product (like all oral contraceptives) is intended to
prevent pregnancy. It does not protect against HIV
infection (AIDS) and other sexually transmitted dis-
eases.

you notice any unusual physical disturbances while taking
the pill. In addition, drugs such as rifampin, as well as some
anti-convulsants and some antibiotics, may decrease oral
contraceptive effectiveness.

Studies to date of women taking the pill have not shown
an increase in the incidence of cancer of the breast or
cervix. There is, however, insufficient evidence to rule out
the possibility that the pill may cause such cancers. Some
studies have reported an increase in the risk of developing
breast cancer, particularly at a younger age. This increased
risk appears to be related to duration of use.

Taking the pill provides some important non-contracep-
tive health benefits. These include less painful menstrua-
tion, less menstrual blood loss and anemia, fewer pelvic
infections and fewer cancers of the ovary and the lining of
the uterus.

Be sure to discuss any medical condition you may have
with your health care provider. Your health care provider will
take a medical and family history before prescribing oral
contraceptives and will examine you. The physical exami-
nation may be delayed to another time if you request it and
the health care provider believes that it is a good medical
practice to postpone it. You should be reexamined at least
once a year while taking oral contraceptives. The detailed
patient information leaflet gives you further information
which you should read and discuss with your health care
provider.

HOW TO TAKE THE PILL

See full text of **HOW TO TAKE THE PILL** which is printed
in full in the Detailed Patient Labeling.

Revised: Nov. 20, 1996

Manufactured for
SCS Pharmaceuticals
Chicago IL 60680 USA
By Syntex (F.P.) Inc.
Humacao, PR 00791

Address medical inquiries to:
G.D. Searle & Co.
Healthcare Information Services
5200 Old Orchard Road
Skokie IL 60077

SCS Pharmaceuticals

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Printed in USA

Trivora®-21 Tablets

Trivora®-28 Tablets

(levonorgestrel and ethinyl estradiol tablets, USP) —
triphasic regimen



8

A08821

CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER 074538

CHEMISTRY REVIEW(S)

1. CHEMISTRY REVIEW NO. 5

2. ANDA # 74-538

3. NAME AND ADDRESS OF APPLICANT

G. D. Searle & Co.
4901 Searle Parkway
Skokie, IL 60077

Former owner of the ANDA:

Syntex (F.P.), Inc.

HCO1 Box 16625, Bo. Mariana Road. 909, KM. 111

Humacao, Puerto Rico 00791

[This ANDA was transferred to G. D. Searle & Co. per NC dated 8-31-95]

4. BASIS OF SUBMISSION

Acceptable per CR # 1.

5. SUPPLEMENT(s)

N/A

6. PROPRIETARY NAME

Trivora™ 21 and 28 Tablets

7. NONPROPRIETARY NAME

Levonorgestrel and Ethinyl Estradiol Tablets

8. SUPPLEMENT(s) PROVIDE(s) FOR:

N/A

9. AMENDMENTS AND OTHER DATES:

FIRM:

Original submission: 8-19-94

Amendment: 9-27-94 & 10-7-94 (To submit response to OGD's letter dated 9-12-94)

NC: 3-28-95

NC: 8-31-95 (Transfer of ownership of this ANDA from Syntex)

NC: 9-18-95 (Transfer of ownership of this ANDA from Searle)

ONC: 11-17-95 (Submission of updated FDA Form 356h after ownership change)

NC (Bio): 11-30-95 (Response to bio letter dated 3-27-95)

NC: 5-15-96

Major Amendment: 6-10-96 (Response to NA - chemistry + labeling letter dated 3-23-95).

NC (Bio): 7-19-96

NC: 9-3-96

Minor Amendment: 11-21-96

New Submissions

Minor Amendment: 2-14-97 (Response to NA letter dated 12-27-96)

ONC (BIO): 2-20-97

ONC (BIO): 2-25-97

* NC: 10-3-97

* Amendment: 10-24-97 (Response to 9-22-97 NA letter)

FDA: -

Incomplete filing letter: 9-12-94

Accepted for filing: 10-11-94

NA letter (Chemistry + Labeling): 3-23-95

NA letter (Bio): 3-27-95

Acknowledgment of transfer: 11-17-95

NA letter: 10-15-96 (Chemistry + Labeling)

NA letter: 12-27-96 (Chemistry + Labeling)

Bio Acceptance letter: 2-24-97

ANDA NA letter: 9-22-97

10. PHARMACOLOGICAL CATEGORY
Oral Contraceptive

11. Rx or OTC
Rx

12. RELATED IND/NDA/DMF(s)

13. DOSAGE FORM
Tablet

14. POTENCY
21 Day: 0.05 mg/0.03 mg; 0.075 mg/0.04 mg; 0.125 mg/0.03 mg
28 day: 0.05 mg/0.03 mg; 0.075 mg/0.04 mg; 0.125 mg/0.03 mg;
and placebo

15. CHEMICAL NAME AND STRUCTURE
Listed in labeling insert per current USP

16. RECORDS AND REPORTS
N/A

17. COMMENTS
Searle has submitted adequate information regarding
controls, and testing for active and inactive ingredients.
Adequate information is submitted for manufacturing,

container/closure system, testing and stability testing for the drug product. No revision is reported in current USP for the drug product. Status for both DMFs for active ingredients remains adequate.

NOTE:

The subject drug product is a triphasic regimen of active oral contraceptive tablets supplied as active tablets only (21 day supply) or in conjunction with 7 placebo tablets (28 days supply).

18. CONCLUSIONS AND RECOMMENDATIONS
Approved.

19. REVIEWER: DATE COMPLETED:
Mujahid L. Shaikh 12-5-97
Revised 12-11-97

cc: ANDA 74-538
DUP File
Division File
Field Copy

Endorsements:

HFD-625/M.Shaikh/12-8-97
HFD-625/M.Smela/12-8-97
x:new\firmnsz\searle\ltrs&rev\74538rev.5
F/T by: ~~12/11/97~~

12/11/97

12/11/97

CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER 074538

BIOEQUIVALENCE REVIEW(S)

APR 25 1997

Levonorgestrel/Ethinyl Estradiol,
Trivora™, Triphasic Regimen
0.050 mg / 0.030 mg
0.075 mg / 0.040 mg
0.125 mg / 0.030 mg
ANDA #74-538
Reviewer: L. Chuang

G.D. Searle & Co.
Skokie, IL
Submission Date:
November 30, 1995
July 19, 1996
January 27, 1997

**Addendum to a Review of An Amendment to Two Bioequivalence Studies and
a Waiver Request**

In the review of 02/19/97, a waiver of in vivo bioequivalence study requirements for the firm's Levonorgestrel/Ethinyl Estradiol tablet, 0.075 mg/ 0.040 mg, was granted per 21 CFR section 320.22(d)(2). This addendum provides background of this waive-up decision.

This waive-up from 0.03 mg EE to 0.04 mg EE is acceptable because:

- 1.
2. As indicated in the review of 02/28/95, there was a letter of understanding of 09/04/92 that *in vivo* bioequivalence study was required for the high and low dose tablets while the waiver for the mid dose tablet could be considered after the completion of these biostudies. This is based on the results of a meeting among the firm's representatives and the staff of the Agency on 09/04/92.

In addition, it was noted in the low dose study, the T_{max} of LNG for 10 subjects, and the T_{max} of EE for 1 subject, were all at the first blood collection time point (0.5 hour). Therefore the data from these subjects from the treatment when this occurred, were deleted. The recalculated 90% confidence intervals are presented below in Tables 1&2.

Table 1: Statistical Analysis - EE - Low Dose Study - Excluding Subject #13 - Treatment B (Test)				
Parameter	LS Means (Syntex - Test)	LS Means (Wyeth-Ayerst -Reference)	T/R	90% Conf. Int.
AUC_{0-t} (pg*hr/mL)	1382.24	1291.19	1.07	100.66; 113.44
AUC_{0-inf} (pg*hr/mL)	1523.54	1431.11	1.06	100.84; 112.07
C_{max} (pg/mL)	145.97	140.27	1.04	95.46; 112.67
$LNAUC_{0-t}$	1318.58 ^a	1249.04 ^a	1.06 ^b	99.35; 112.17

LNAUC _{0-inf}	1460.61 ^a	1388.65 ^a	1.05 ^b	99.87; 110.78
LNC _{max}	141.67 ^a	134.76 ^a	1.05 ^b	97.23; 113.65
a = Geometric LS Mean b = Ratio of Geometric LS Means				

**Table 2 : Statistical Analysis - LNG - Low Dose Study -
Excluding Subjects #8,25, &26, Treatment A (Reference) and
Subjects #3, 12, 15, 16, 19, 22, 25,, &118, Treatment B (Test)**

Parameter	LS Means (Syntex - Test)	LS Means (Wyeth-Ayerst -Reference)	T/R	90% Conf. Int.
AUC _{0-t} (ng*hr/mL)	29.33	27.73	1.06	100.66; 110.87
AUC _{0-inf} (ng*hr/mL)	34.29	31.40	1.09	101.37; 116.99
C _{max} (ng/mL)	3.14	2.84	1.11	105.19; 116.35
LNAUC _{0-t}	27.21 ^a	26.01 ^a	1.05 ^b	99.89; 109.57
LNAUC _{0-inf}	30.78 ^a	29.09 ^a	1.06 ^b	100.69; 111.20
LNC _{max}	3.01	2.70 ^a	1.11 ^b	104.64; 118.37
a = Geometric LS Mean b = Ratio of Geometric LS Means				

Lin-Whei Chuang
Division of Bioequivalence
Review Branch I

RD INITIALED YHUANG
FT INITIALED YHUANG

Concur: _____ Date: 4/25/97
for Nicholas Fleischer, Ph.D.
Director, Division of Bioequivalence

cc: ANDA 74-538 (original, duplicate), Chuang, HFD-652 (Huang), Drug File, Division File

First Draft 04/04/97, LWC, c:\wpfiles\74-538aa.n95
Final Pink 04/09/97, LWC, x:\new\firmnsz\searle\lrs&rev\74-538aa.n95
2nd Final Pink 04/25/97, LWC, x:\new\firmnsz\searle\lrs&rev\74-538aa.n95

OFFICE OF GENERIC DRUGS

DIVISION OF BIOEQUIVALENCE

ANDA # 74-538

SPONSOR: G.D.Searle & Co. (Ownership of this ANDA was transferred from Syntex to G.D. Searle on 08/31/95)

DRUG & DOSAGE FORM : Levonorgestrel/Ethinyl Estradiol (LNG/EE) Tablets

STRENGTH (s): 0.05 mg/0.03 mg, 0.075 mg/0.04 mg, 0.125 mg/0.03 mg

TYPE OF STUDY: Two Fasting Studies

STUDY SITE: CLINICAL :
ANALYTIC

STUDY SUMMARY for the 0.05 mg/0.03 mg tablet:

Parameter of EE	test	ref	ratio	90% CI (log)
	(LS Geometric Mean)			
<u>Cmax(pg/ml)</u>	<u>141.74</u>	<u>134.56</u>	<u>1.05</u>	<u>(0.971-1.132)</u>
<u>AUC(0-T) pgxhr/ml</u>	<u>1323.9</u>	<u>1249.0</u>	<u>1.06</u>	<u>(0.999-1.12.6)</u>
<u>AUC(0-Inf)pgxhr/ml</u>	<u>1525.4</u>	<u>1422.2</u>	<u>1.07</u>	<u>(1.010-1.125)</u>
<u>Tmax hr</u>	<u>1.63</u>	<u>1.69</u>	<u>0.96</u>	
<u>Half-life hr</u>	<u>15.0</u>	<u>14.4</u>	<u>1.04</u>	
Parameter of LNG	test	ref	ratio	90% CI (log)
	(LS Geometric Mean)			
<u>Cmax(ng/ml)</u>	<u>3.034</u>	<u>2.718</u>	<u>1.11</u>	<u>(1.059-1.116)</u>
<u>AUC(0-T) ngxhr/ml</u>	<u>27.11</u>	<u>26.31</u>	<u>1.02</u>	<u>(0.977-1.070)</u>
<u>AUC(0-Inf)ngxhr/ml</u>	<u>32.78</u>	<u>31.82</u>	<u>1.04</u>	<u>(0.986-1.092)</u>
<u>Tmax hr</u>	<u>0.938</u>	<u>1.02</u>	<u>0.92</u>	
<u>Half-life hr</u>	<u>32.7</u>	<u>31.2</u>	<u>1.05</u>	

STUDY SUMMARY for the 0.125 mg/0.03 mg tablet:

Parameter of EE	test	ref	ratio	90% CI (log)
	(LS Geometric Mean)			
<u>Cmax(pg/ml)</u>	<u>139.77</u>	<u>137.00</u>	<u>1.02</u>	<u>(0.945-1.100)</u>
<u>AUC(0-T) pgxhr/ml</u>	<u>1328.3</u>	<u>1320.8</u>	<u>1.01</u>	<u>(0.956-1.058)</u>
<u>AUC(0-Inf)pgxhr/ml</u>	<u>1465.6</u>	<u>1451.0</u>	<u>1.01</u>	<u>(0.961-1.055)</u>
<u>Tmax hr</u>	<u>1.89</u>	<u>1.77</u>	<u>1.07</u>	
<u>Half-life hr</u>	<u>13.1</u>	<u>13.2</u>	<u>0.99</u>	

Parameter of LNG	test (LS Geometric Mean)	ref	ratio	90% CI (log)
<u>C_{max}(ng/ml)</u>	<u>5.989</u>	<u>6.172</u>	<u>0.97</u>	(0.916-1.031)
AUC(0-T) ngxhr/ml	62.80	65.37	0.96	(0.900-1.017)
<u>AUC(0-Inf)nxhr/ml</u>	<u>74.44</u>	<u>79.04</u>	<u>0.94</u>	<u>(0.887-0.999)</u>
<u>T_{max} hr</u>	<u>1.33</u>	<u>1.25</u>	<u>1.06</u>	
<u>Half-life hr</u>	<u>29.8</u>	<u>31.2</u>	<u>0.96</u>	

In addition, it was noted in the low dose study, the T_{max} of LNG for 10 subjects, and the T_{max} of EE for 1 subject, were all at the first blood collection time point (0.5 hour). Therefore the data from these subjects from the treatment when this occurred, were deleted. The recalculated 90% confidence intervals are presented below in Tables 1&2.

Table 1: Statistical Analysis - EE - Low Dose Study - Excluding Subject #13 - Treatment B (Test)				
Parameter	LS Means (Syntex - Test)	LS Means (Wyeth-Ayerst -Reference)	T/R	90% Conf. Int.
AUC ₀₋₄ (pg*hr/mL)	1382.24	1291.19	1.07	100.66; 113.44
AUC _{0-inf} (pg*hr/mL)	1523.54	1431.11	1.06	100.84; 112.07
C _{max} (pg/mL)	145.97	140.27	1.04	95.46; 112.67
LNAUC ₀₋₄	1318.58 ^a	1249.04 ^a	1.06 ^b	99.35; 112.17
LNAUC _{0-inf}	1460.61 ^a	1388.65 ^a	1.05 ^b	99.87; 110.78
LNC _{max}	141.67 ^a	134.76 ^a	1.05 ^b	97.23; 113.65
a = Geometric LS Mean b = Ratio of Geometric LS Means				

Table 2 : Statistical Analysis - LNG - Low Dose Study - Excluding Subjects #8,25, &26, Treatment A (Reference) and Subjects #3, 12, 15, 16, 19, 22, 25,, &118, Treatment B (Test)				
Parameter	LS Means (Syntex - Test)	LS Means (Wyeth-Ayerst -Reference)	T/R	90% Conf. Int.
AUC ₀₋₄ (ng*hr/mL)	29.33	27.73	1.06	100.66; 110.87
AUC _{0-inf} (ng*hr/mL)	34.29	31.40	1.09	101.37; 116.99

C_{max} (ng/mL)	3.14	2.84	1.11	105.19; 116.35
$LNAUC_{0-t}$	27.21 ^a	26.01 ^a	1.05 ^b	99.89; 109.57
$LNAUC_{0-inf}$	30.78 ^a	29.09 ^a	1.06 ^b	100.69; 111.20
LNC_{max}	3.01	2.70 ^a	1.11 ^b	104.64; 118.37
a = Geometric LS Mean b = Ratio of Geometric LS Means				

DISSOLUTION:

Conditions: Paddle apparatus, 75 rpm, 500 mL of 5 ppm polysorbate solution in water

0.05 mg/0.03 mg Tablet

Time(min)	Test Mean(range) of EE	Ref. Mean(range) of EE
15	<u>59.4</u>	<u>56.7</u>
30	<u>83.7</u>	<u>73.1</u>
45	<u>90.0</u>	<u>76.9</u>
60	<u>92.6</u>	<u>78.2</u>

Time(min)	Test Mean(range) of LNG	Ref. Mean(range) of LNG
15	<u>64.3</u>	<u>66.3</u>
30	<u>86.9</u>	<u>83.5</u>
45	<u>94.9</u>	<u>87.7</u>
60	<u>95.8</u>	<u>89.3</u>

0.125 mg/0.03 mg Tablet

Time(min)	Test Mean(range) of EE	Ref. Mean(range) of EE
15	<u>41.0</u>	<u>68.7</u>
30	<u>67.3</u>	<u>79.8</u>
45	<u>79.7</u>	<u>81.7</u>
60	<u>83.3</u>	<u>82.6</u>

Time(min)	Test Mean(range) of LNG	Ref. Mean(range) of LNG
15	<u>41.8</u>	<u>68.7</u>
30	<u>69.8</u>	<u>86.6</u>
45	<u>83.0</u>	<u>90.1</u>
60	<u>88.9</u>	<u>91.6</u>

0.075 mg/0.04 mg Tablet

Time(min)	Test Mean(range) of EE	Ref. Mean(range) of EE
15	<u>53.1</u>	<u>81.3</u>
30	<u>79.5</u>	<u>91.9</u>

45	<u>92.1</u>	<u>93.3</u>
60	<u>98.4</u>	<u>96.3</u>

Time(min)	Test Mean(range) of LNG	Ref. Mean(range) of LNG
15	<u>50.6</u>	<u>75.3</u>
30	<u>74.4</u>	<u>92.4</u>
45	<u>86.7</u>	<u>95.0</u>
60	<u>92.6</u>	<u>98.3</u>

Q = NLT in 60 min. and NLT in 30 min. for EE and LNG respectively (USP 23).

WAIVER: The waiver of the 0.075 mg/0.04 mg strength is granted per 21 CFR section 320.22(d)(2). The waive-up from 0.03 mg EE to 0.04 mg EE is acceptable because the linearity of EE between 0.035-0.05 mg was established in the BE studies

(Not releasable through FOI). This waiver is also based on the letter of understanding of 09/04/92 (see review of 02/28/95).

PRIMARY REVIEWER: J BRANCH: I

INITIAL: DATE: 4/25/97

TEAM LEADER: BRANCH: I

INITIAL: L DATE: 4/25/97

fw DIRECTOR
DIVISION OF BIOEQUIVALENCE

INITIAL: DATE: 4/23/97

DIRECTOR
OFFICE OF GENERIC DRUGS

INITIAL: DATE:

FEB 19 1997

Levonorgestrel/Ethinyl Estradiol,
TrivoraTM, Triphasic Regimen
0.050 mg / 0.030 mg
0.075 mg / 0.040 mg
0.125 mg / 0.030 mg
ANDA #74-538
Reviewer: L. Chuang

G.D. Searle & Co.
Skokie, IL
Submission Date:
November 30, 1995
July 19, 1996
January 27, 1997

Review of An Amendment to Two Bioequivalence Studies

The ownership of this ANDA was transferred from Syntex to G.D. Searle on 08/31/95. The two bioequivalence studies conducted by the firm on its Levonorgestrel/Ethinyl Estradiol tablets, 0.050 mg/ 0.030 mg and 0.125 mg/0.030 mg, comparing them to Triphasil^R 0.050 mg/0.030 mg and 0.125 mg/0.030 mg, respectively, have been found incomplete due to 5 deficiencies. First amendment submitted on 11/30/95 by Searle was found to be incomplete and the firm was called by the CSO on 04/04/96 to be informed of 3 more deficiencies. A subsequent amendment was submitted on 07/19/96. It was also noted by the reviewer that Method Report IAR-B-1029 was stated as *in preparation* in the submission of 11/30/95. A telephone request for this report was made and it was submitted on 01/27/97.

The eight deficiencies and the responses by the firm are discussed below:

1. The firm did not provide the frame size of individual subjects in order for the reviewer to determine if their weights were within 10% of normal weight as described in the table of "Desirable Weight for Adults from the Metropolitan Life Insurance Company".

The firm provided the weight and height of each subject and stated that the frame size data were not collected.

After reviewing each subject's data, it was noted that 3 subjects (#4, #14, and #15) from the low-dose study and 3 subjects (#15, #16, and #18) from the high-dose study, were outside the weight range provided in the *1983 Metropolitan Height and Weight Tables for Women*. Therefore these 6 subjects did not qualify for inclusion in the study.

However, this deviation from protocol is considered minor and should not affect the outcome of the study.

2. Assay validation information supporting the lowest quantitation limits for both EE and LNG were not provided by the firm.

The precision and accuracy at the lowest quantitation limits of all assays conducted during both studies are presented below:

	Precision (%CV)	Accuracy (%)
--	-----------------	--------------

The precision and accuracy reported here are acceptable.

3. The concentration range of the standard curve was not provided.

4. The acceptance criteria for the standard curve and the QC samples of each run were not provided.

For an assay to be accepted, no more than two QC samples in the run and no two at a given concentration may deviate by more than 20% from the validated mean concentration established for the QC.

5. The subject number for the subject whose hour 0.5, period 1, plasma sample was lost during analytical process, was inconsistent in the text (#27) and Table 2 (#3) of Appendix 4, the "Plasma Assay Data Report".

It was actually subject #3 whose plasma sample at 0.5 hour during period 1 was insufficient for the second assay after the first was invalidated due to a robot processing error.

6. The results of standard curves from all assays, including the means and coefficient variations should be submitted.

7. Clarification of the concentrations for the QC samples of LNG.

The explanation by the firm is acceptable.

8. The medical records of case report and clinical records of entrance screening, post-study examination were not included.

The firm submitted the pre-study physical data for both studies including the information of subjects' weight which were discussed in #1.

Additional medical records/case reports and clinical records at screening and post-study examination were requested by telephone on 02/07/97.

Additional Comment on the Dissolution Specification:

The proposed dissolution specification by the firm (Q= at 60 minutes for both ingredients) is for sugar-coated tablet according to USP 23, p.881. This is because the reference products are sugar-coated.

However, the firm's products are uncoated and should follow specification for uncoated tablets (USP 23, page 881) of "Not less than (Q), and not less than (Q), of the labeled amount of levonorgestrel and ethinyl estradiol in the dosage form are dissolved in 30 minutes, and 60 minutes respectively".

Recommendation:

1. The bioequivalence studies conducted by G.D. Searle Co. on its Levonorgestrel/Ethinyl Estradiol tablets, 0.050 mg/ 0.030 mg and 0.125 mg/0.030 mg, batch #3816-007-12055 and #3816-007-12057 respectively, comparing them to Triphasil^R 0.050 mg/0.030 mg and 0.125 mg/0.030 mg respectively, have been found acceptable by the Division of Bioequivalence. Both studies demonstrated that Searle's Levonorgestrel/Ethinyl Estradiol tablets, 0.050 mg/ 0.030 mg and 0.125 mg/0.030 mg, are bioequivalent to the reference products, Triphasil^R 0.050 mg/0.030 mg and 0.125 mg/0.030 mg, respectively, manufactured by Wyeth-Ayerst when administered under fasting condition.
2. The dissolution testings conducted by G.D. Searle Co. on all three strengths of the test products, batch #3816-007-12055, #3816-007-12056 and #3816-007-12057, are acceptable. The dissolution testings should be incorporated into the firm's manufacturing controls and stability program. The dissolution testing should be conducted in 500 mL of 5 ppm polysorbate solution in water at 37°C using USP XXIII apparatus 2 at 75 rpm. The test products should meet the following USP 23 specifications for uncoated tablets of the test product:

"not less than (Q), and not less than (Q), of the labeled amount of levonorgestrel and ethinyl estradiol in the dosage form are dissolved in 30 minutes, and 60 minutes respectively."
3. The waiver of in vivo bioequivalence study requirements for the firm's Levonorgestrel/Ethinyl Estradiol tablet, 0.075 mg/ 0.040 mg, is granted per 21 CFR section 320.22(d)(2). The 0.075 mg/ 0.040 mg tablet of the test product will therefore be deemed bioequivalent to Triphasil^R 0.050 mg/0.030 mg, manufactured by Wyeth-Ayerst.

Lin-whei Chuang
Division of Bioequivalence
Review Branch I

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